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**Associate Deputy Administrator**
for Institutions & Asset Management
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# NASA Shared Services Center (NSSC) Implementation Plan Report

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# Foreword

NASA is an agency that is efficient, effective, and accountable to the American people. NASA's first Implementing Strategy (IS-1) as identified in the *2003 Strategic Plan* is to "Achieve management and institutional excellence comparable to NASA's technical excellence. We are continually exploring new ways to improve our Agency and to truly become "One NASA." Currently, many initiatives are underway to achieve these Agency goals. One of these crucial initiatives is the development and implementation of the NASA Shared Services Center (NSSC). The NSSC would deliver to NASA employees across the Agency, a higher level of service and a commitment to becoming "One NASA."

Over the past year, the NSSC Implementation Team has been working to develop the structure, scope, dynamics, and details of the NASA Shared Services Center.

This Final Implementation Plan follows the Preliminary Implementation Plan that was released for distribution in April 2003. This Final Implementation Plan is formatted in the same manner as the Preliminary Implementation Plan. The Final Implementation Plan, however, features information, analysis, and decisions that have developed since the Preliminary Implementation Plan. New information has been developed concerning primarily the Human Capital Strategy and the Business Operations Strategy. The NSSC Final Implementation Plan further develops and expresses the progress the NSSC Implementation Team has made this past year in their efforts to improve NASA through the development of the NSSC.

We are pleased to share with you the plans for enhancing our Agency through the proposed NSSC. The NSSC is the next step for our Agency to take to provide our employees with the highest level of services. This is an exciting time within the NASA family. We are pleased to have each of you involved we move forward towards creating an even better NASA than we have today. With your support and commitment to the NSSC, NASA may truly pursue service excellence through the implementation of the NASA Shared Services Center. As we work together towards transforming the NSSC from a concept into reality, we would truly be one step closer to becoming "One NASA."

James Jennings
Associate Deputy Administrator
for Institutions and Asset Management

# Table of Contents for the Final NSSC Implementation Plan

# 1. Executive Summary

The NASA Shared Services Center (NSSC) Implementation Team's mission is "to establish a consolidated shared services organization that would provide higher quality, more cost effective and efficient services for selected NASA business and technical services." This Final NSSC Implementation Plan Report represents the foundation for further developments concerning planning and implementing the NSSC. This Final Implementation Plan features those new developments since the Implementation Plan was released in April 2003 to produce a complete document concerning proposed implementation of the NSSC.

Over the past year, the NSSC Implementation Team conducted extensive research and performed in-depth analysis on a range of issues surrounding the implementation of the NSSC. The following list features the documents developed by the Implementation Team over the course of the past year:

- Volume 1: NSSC Final Implementation Plan Report
- Volume 2: NSSC Communication & Stakeholder Management Strategy
- Volume 3: NSSC Business Operations: SIPOC Diagram Summary Report
- Volume 4: NSSC Human Resources Subteam Report
- Volume 5: NSSC Procurement Subteam Report
- Volume 6: NSSC Financial Management Business Plan

The NSSC Implementation Team recommends proceeding with planning for implementation of the NSSC. In the Preliminary Implementation Plan the Team recommended the Direct Conversion acquisition process per OMB Circular A-76. However, due to changes in OMB regulations concerning the process of and options for A-76 Competitions, Direct Conversion is no longer an option. At this date the NSSC Implementation Team recommends that NASA conduct a public-private competition under the guidance of OMB Circular A-76.

NASA decisions include: 1) recommended governance structure, 2) hiring of NSSC Executive Director and Deputy, 3) environment that focuses on benefits to NASA and consolidation of shared services in a single location for selected functional activities, 4) functional review recommendations for activities to consolidate at the NSSC, and 5) Competitive Sourcing Strategy.

This report updates the Preliminary Report with the development of a detailed Human Capital Strategy (HCS) and Business Operations Strategy (BOS) as well as the search for an NSSC Executive Director. The HCS and BOS developments are detailed in this Final Implementation Plan Report. Implementation of an NSSC would provide the potential to achieve standardized business and technical services that are more consistent, higher-quality, and more timely. The annual estimated cost savings to be realized at stabilization of the NSSC is approximately $6 million per year and reallocation of over 200 civil service FTE to other critical Agency mission related activities Proposed implementation of the NASA Shared Services Center would:

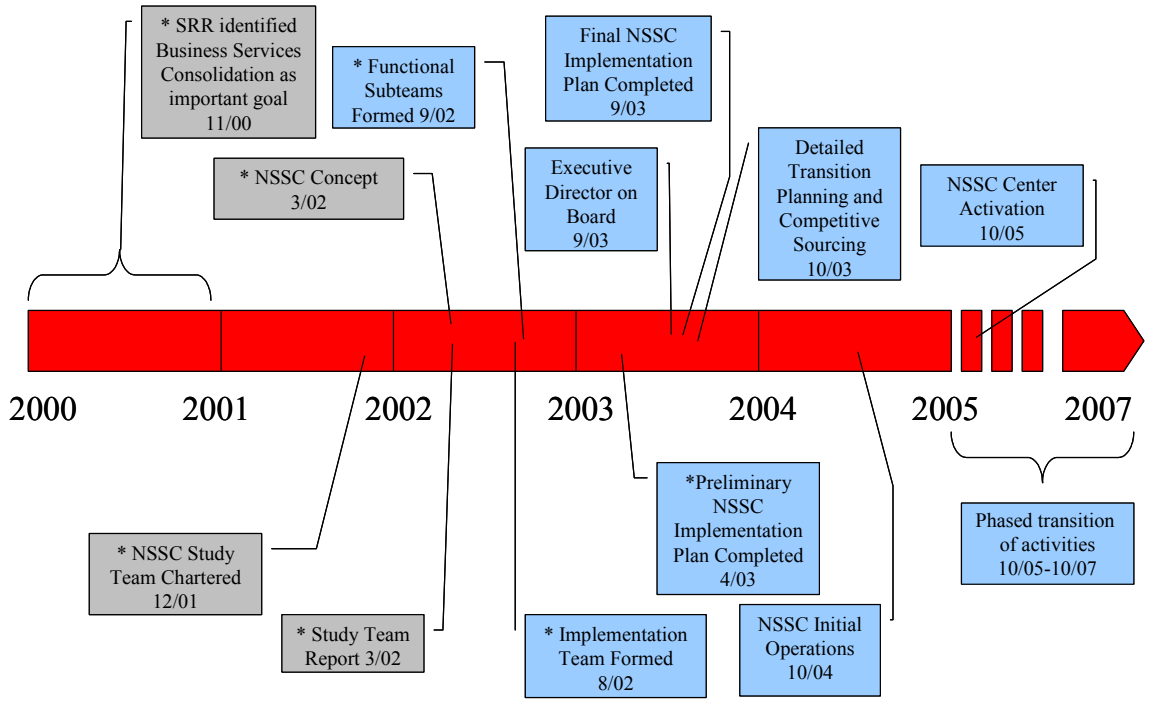
- Provide more consistent, high-quality, and timely services at lower cost
- Improve timeliness, accuracy, and consistency of information delivered to the customers
- Promote strategic management of NASA resources and positions the Agency to capitalize on further innovation
- Support the President's Management Agenda for improved government performance
- Promote a "One NASA" Agency focus
- Sustain strong support for individual Centers through resident Customer Service Representatives
- Provide opportunity to achieve synergy across functions
- Achieve critical mass of "core" expertise to manage and perform shared services
- Reduce resources expended for institutional support areas
- Afford opportunities for continual improvement in each functional area as standardization and 'best practices' are incorporated

A main catalyst for the NSSC was the negative impact to business support services resulting from significant workforce reductions during the 1990's. In FY2001, NASA's Strategic Resources Review identified business service consolidation as an important goal. In December 2001, NASA chartered a Study Team to research the shared services concept. The Consolidated Business Services Study Team Report strongly supported the NASA Shared Services Center (NSSC) concept and NASA's Enterprise Council approved the establishment of the NSSC Implementation Team in March 2002. The Implementation Team was formed in August 2002 to develop the NSSC implementation plan and schedule. Implementation Team members formed functional subteams in September 2002 to review, revalidate, and augment the Study Team Report.

The Implementation Team and Subteams reviewed the following functions in the context of the NSSC: Human Resources (HR), Procurement, Financial Management (FM), Resources Management (RM), Information Technology (IT), and Facilities. The Implementation Team concluded that a significant number of functional activities or services would be prime candidates for migration to a shared services environment.

The Implementation Team developed an NSSC migration schedule that highlights the various stages of the NSSC implementation. The Team proposes that the NSSC management team be established to begin detailed transition planning and initial operations in October 2004. During this time, the NASA Computing and Communications Services (NCCS) or IT services would be virtually consolidated under the NSSC. These services would continue to operate utilizing infrastructure currently in-place. The NASA Shared Services Center facility activation date is proposed for October 2005. From October 2005 to October 2007, the activities the implementation team identified as candidates for the NSSC would begin a phased transition. The following figure displays the milestones in the NSSC Project. Milestones with asterisks have been completed.

**Figure 1-1: NSSC Project Milestones**



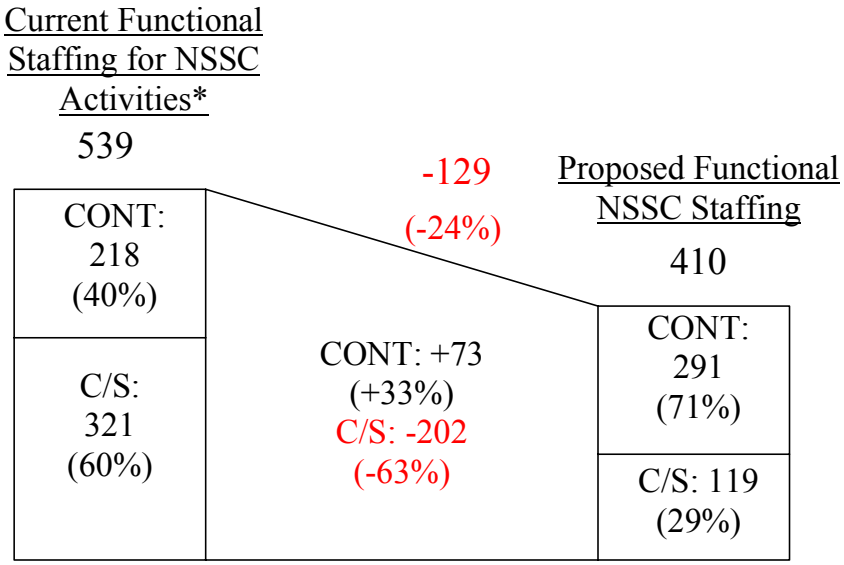

Note: Gray boxes indicate pre-Implementation Team activities. Boxes with asterisks indicate that activity has been completed.

The Implementation Team developed the following guidelines for the organization and governance of the NSSC:

- NSSC would report to the Associate Deputy Administrator for Institutions and Asset Management
- NSSC would act as a peer to NASA Centers in terms of governance and reporting structures
- NSSC would have a single Shared Services Executive who would be a general manager as opposed to a functional manager
- Executive Director (peer to Center Directors) would report to the ADAIAM
- Functional Leads at NSSC would have a dotted line relationship with Agency and Center functional leads
- NSSC would have customer support liaisons at the NASA Centers
- A "Board of Directors" composed of various stakeholders would interact with the leadership of the NSSC

With regard to the impact on FTEs, the following chart depicts the changes in Civil Service and Contractor FTEs from the current state to the NSSC Vision (excluding Information Technology and Office of the Executive Director (OED) figures).

**Figure 1-2: Changes in CS and Contractor FTEs from Current State to NSSC Vision**




* September 2002 Data

The following table displays, by function, the current FTEs identified as candidates for the NSSC compared to the forecasted FTEs needed in the NSSC to perform the same functional activities.

**Table 1-1: Summary FTEs by Function**

| | FTEs Identified as NSSC Candidates* | | | FTEs Forecasted to Perform Functional Tasks at NSSC | | |
|---|---|---|---|---|---|---|
| Function | Civil Service | Contractor | Total | Civil Service | Contractor | Total |
| HR | 79 | 76 | 155 | 21 | 94 | 115 |
| Procurement | 100 | 44 | 144 | 40 | 91 | 131 |
| FM | 142 | 98 | 240 | 58 | 106 | 164 |
| Subtotal | 321 | 218 | **539** | 119 | 291 | **410** |
| IT** | 118 | 553 | 671 | 118 | 553 | 671 |
| **Total** | 439 | 771 | **1,210** | 237 | 844 | **1,081** |

* September 2002 Data

**Assume IT FTEs remain constant in the Current State and the NSSC Vision

Note that above figures include Directors, Secretaries, and Customer Service Representatives

The following table displays the costs savings per year for aggregate salaries and associated costs for those functions with activities or services migrating to the NSSC.

**Table 1-2: Total Annual NSSC Cost Analysis**

| (FY02K$) | Total Annual Cost for NSSC Candidate FTEs in Current State* | | | Total Annual Cost for FTEs in the NSSC Vision | | | Dollar Savings (+) or Dollar Loss (-) from Current State to NSSC Vision | | |
|---|---|---|---|---|---|---|---|---|---|
| Function | Civil Servants | Contractors | Total | Civil Servants | Contractors | Total | Civil Servants | Contractors | Total |
| HR | $6,401 | $6,312 | $12,713 | $2,078 | $7,766 | $9,844 | $4,323 | -$1,454 | $2,869 |
| FM | $10,690 | $7,261 | $17,951 | $5,128 | $8,262 | $13,390 | $5,562 | -$1,001 | $4,561 |
| Procurement | $8,660 | $3,849 | $12,509 | $3,967 | $7,383 | $11,350 | $4,693 | -$3,534 | $1,159 |
| Subtotal | $25,751 | $17,422 | **$43,173** | $11,173 | $23,411 | **$34,584** | $14,578 | -$5,989 | **$8,589** |
| IT** | $13,426 | $101,586 | $115,012 | $13,426 | $101,586 | $115,012 | $0 | $0 | $0 |
| Total | $39,177 | $119,008 | **$158,185** | $24,599 | $124,997 | **$149,596** | $14,578 | -$5,989 | **$8,589** |

* September 2002 Data

**Assume IT FTEs remain constant in the Current State and the NSSC Vision

The six functional subteams collected comprehensive data, reviewed functional characteristics (both qualitative and quantitative) and conducted robust analyses to arrive at a decision as to whether a functional activity was a candidate for migration to the NSSC. The table below summarizes the six functional areas and the functional activities or services that were examined. The functional tasks were placed into three categories:

- **Services to be Consolidated**: These functional activities would migrate to the NSSC from FY06 to FY08.
- **More Study Needed**: Further study could identify tasks within these functions as candidates for NSSC transition.
- **Services Remaining at Centers**: Services that would remain at the Centers are more strategic in nature and directly support NASA's missions. These services are best performed at the Centers to maintain effective relations, provide responsive services and gain organizational understanding to enable proactive service delivery.

Strategic Human Capital Leadership and Planning, Workforce Planning and Analysis, Workforce Recruitment and Retention, Workforce and Leadership Development and Capability Building, Employee Commitment and Workplace Environment, and Strategic Management of NASA's HR Community

**Table 1-3: NSSC Consolidated Characteristics Matrix**

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Human Resources**<br><br>*49 Activities Reviewed* | ■ Personnel Program Support<br>■ Employee Development and Training Support<br>■ Employee Benefits and Services<br>■ HR Information Systems and Report<br>■ Personnel Action Processing & Recordkeeping<br><br>*(27% of HR FTEs/WYEs)* | ■ Management Education Center at WFF | ■ Strategic Human Capital Leadership and Planning<br>■ Workforce Planning and Analysis<br>■ Workforce Recruitment and Retention<br>■ Workforce and Leadership Development and Capability Building<br>■ Employee Commitment and Workplace Environment<br>■ Strategic Management of NASA's HR Community |

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Procurement**<br><br>*109 Activities Reviewed* | ■ Transactional Services (Grants, Cooperative Agreements & SBIR/ STTR Processing)<br>■ NSSC Major Contracting Operations<br>■ Workforce Development and Management Operations<br>■Procurement Electronic Business Systems<br><br>*(15% of Procurement FTEs/WYEs)* | ■ Subcategories of Simplified Acquisition Procurements | ■ Policy and strategic support<br>■ Center-Specific Mission Procurements. |
| **Financial Management**<br><br>*29 Activities Reviewed* | ■ Accounts Payable (Payroll, Travel, Vendors)<br>■ Payment Certification<br>■ Accounts Receivable (Billing, Collection)<br>■ Payroll, Time & Attendance<br>■ Labor Processing/Distribution<br>■ Financial Reporting (General Ledger, Treasury 224, NF-1018's)<br>■ Reimbursable Accounting (Collections, Closeouts)<br>■ Internal Reviews for NSSC/F office<br><br>*(44% of FM FTEs/WYEs)* | ■ Property Accounting (Real & Personal)<br>■ Posting of Contractor 533 Cost Input<br>■ Travel Ticketing and Reservations function | ■ Fund Control<br>■ Reconciliations to GL and Subsidiary Accounts<br>■ Rate Development<br>■ Business Process Leads<br>■ SAP Super-users Core Finance<br>■ Budget Execution activities<br>■ Labor System Accounting and Control<br>■ Service Pool Accounting and Operations<br>■ Validation of Receipts<br>■ Personal and Real Property<br>■ Cost Estimation (reimbursable, service pool, contracts)<br>■ Pricing Analysis<br>■ Center Internal Reviews<br>■ Asset Validation & Evaluation<br>■ Center Financial Statements<br>■ 533 Cost Analysis<br>■ Systems Accounting<br>■ General Administration and Policy & Training |
| **Resources Management**<br><br>*28 Activities Reviewed* | | ■ Independent Agency-Level Cost Estimating and Independent Review Capability<br>■ Initialization of Cost Accruals<br>■ Centralized Agency Budget Database Entry and Edit<br>■ Transactional Aspects of Reimbursable Agreements<br>■ Funds Distribution<br>■ Funding of Purchase Requests | ■ Budget Formulation<br>■ Budget Justification<br>■ Budget Execution (most transactional activities already implemented in IFMP)<br>■ Program Analysis<br>■ Cost Estimating |

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Information Technology**<br><br>*37 Activities Reviewed (plus sub-functions)* | ■ IFM Competency Center Services<br>■ NASA's Computing and Communications Services<br>■ ODIN Program Management Services | ■ Calendaring<br>■ Pagers<br>■ Cell Phones<br>■ Print/Fax/Copier Services<br>■ Public Web Hosting<br>■ Web Shop<br>■ Document Management<br>■ Non NISN ISP<br>■ Competency Management Systems<br>■ Asset Management Systems | ■ Program-/Mission-Unique IT Operations |
| **Facilities**<br><br>*180 Activities Reviewed* | | Pending IAM – sub-functions from these functional areas may be able to be transferred:<br>■ Construction of Facilities (construction/renovation and repair)<br>■ Locally Approved Construction/Modification<br>■ Facility Planning and Design Maintenance<br>■ Real Property Management | ■ Advisory - Program/Center Unique Services |
| **Other** | | ■ Legal<br>■ Patents<br>■ Security<br>■ Logistics<br>■ Environmental<br>■ Aircraft<br>■ Integrated Asset Management (IAM)<br>■ Export Control<br>■ Property<br>■ Customer Assurance and Analysis | |

Paramount to the success of the NSSC would be a commitment to proactively and continually improve services and pursue additional candidates for transition to the shared services center. This would include areas identified in the above NSSC Consolidated Matrix under "More Study Needed." In addition, the Implementation Team includes these functional areas for future consideration: legal, patents, security, logistics, environmental, aircraft, integrated asset management (IAM), Export Control, Property, and Customer Assurance and Analysis.

The NSSC would be dedicated to assessing, enhancing, and continually improving the delivery of shared services to its customers. The NSSC would implement change and improvements

throughout the organization to gain cost efficiencies and enhance operations. The NSSC would aggressively use process reengineering, systems engineering, technology enhancements, and a partnering process to develop a series of initiatives to automate and standardize NASA-wide shared services. Keys to success of the integration effort would be effective partnering with Agency functional area policy makers, as well as Enterprise, Center, and HQ Operations customers.

With appropriate stakeholder partnerships, the NSSC would investigate and develop transition and cross-functional integration opportunities on a continuous basis by applying process reengineering and systems engineering methods to operating units. These fully partnered transformation opportunities would be presented to the NSSC Board of Directors for review and approval.

The NSSC would continuously assess and benchmark internal processes to look for ways to improve services. The NSSC would identify a transformation agent(s) who would be responsible for identification, analysis, selection, and implementation of process improvements; use a methodology to determine the overall effectiveness (by time or cost savings) of improved or new processes; prepare detailed plans and schedules for implementation; and prepare thorough follow-up and document lessons-learned.

A shared services environment at NASA is necessary to promote continual process improvement of business and technical services across the Agency while maintaining a stronger focus on core mission. The implementation of the NASA Shared Services Center would provide NASA with a wide array of benefits from improved services at lower costs, improved timeliness, accuracy, and consistency of information, promotion of strategic management of NASA resources, and performance efficiencies to the support of "One NASA" and the PMA. The NSSC also would afford opportunities to achieve synergy across functions while achieving critical mass of "core" expertise to manage and perform shared services. The NSSC would enable NASA to continually review and reengineer critical processes to constantly improve services provided Agency-wide. The NSSC Implementation Team recommends that NASA aggressively continue planning for implementing the NSSC.

# 2. NSSC Highlights

## 2.1 Introduction

The NSSC Implementation Team was formed in August 2002 to continue the original Study Team's investigation into implementing a shared services environment at NASA. The Implementation Team used the original Study Team's Report from March 2002 as the foundation for their investigation. The Implementation Team reviewed six functional areas (Human Resources (HR), Procurement, Financial Management (FM), Resources Management (RM), Facilities and Information Technology (IT)) to determine which functional activities or services would serve as prime candidates for transition to the NASA Shared Services Center (NSSC). The Implementation Team conducted analyses to determine cost/benefit, site selection, competitive strategy, and governance and organizational structure. As a result, the Implementation Team developed this NSSC Final Implementation Plan that discusses how to develop a consolidated organization that provides higher quality, more cost effective and efficient services for selected Agency activities.

## 2.2 History of Shared Services

*"Significant benefits have been achieved with shared services, but the vision for shared services has not been fully realized by any organization. The number of organizations implementing shared service arrangements has grown considerably over the past few years, to the point where over 70% of Fortune 500 companies now have some shared service centers. Continued advances in technology will eliminate the need for many manual transactions and the human effort it takes to perform them. This legacy workforce will be replaced by a leaner, more skilled team that transforms the organization by facilitating business analysis and the delivery of timely, accurate and useful information for decision support."* IBM Shared Services Study, 2001.

## 2.3 Background of the NSSC

This Final NSSC Implementation Plan continues the work of the Consolidated Business Services (CBS) Study Team and the report "Consolidated Business Services – A New Opportunity for Better Services" of March 2002. The conclusions of that study report were:

> "NASA will benefit significantly from consolidating certain business activities into a new Agency service entity. Consolidated business services will improve services, reduce costs, and establish an environment and culture for ongoing best-practice performance. The NASA environment is amenable to a new consolidated business service paradigm:
>
> - Consolidated business services are applicable to approximately 10 to 20 percent of the workforce in the financial management, human resources, procurement, information technology, and resources management areas
> - Consolidated business services represent a natural evolution of, and improvement over, recent Agency centralization activities
> - Private/public sector organizations have demonstrated that consolidating business services is not only doable but also provides significant benefits

- NASA's IFMP system will establish the prerequisite process standardization and Enterprise Resource Planning (ERP) environment that are critical to NSSC success
- Consolidated business services will not only improve service but also support a variety of new and evolving Agency and Presidential management goals
- NASA's ongoing economic and budgetary challenges are providing the often-needed external stimulus to drive significant Agency changes despite the (at times) natural predisposition to avoid major changes

The pursuit of a new business service paradigm would be difficult. The consolidation would involve numerous leadership, human capital, and information systems/IT challenges. Despite these challenges, NASA would benefit significantly from consolidated business services."

The impetus for the Study Team's report stemmed partially from the President's Management Agenda (PMA). Prior efforts to streamline at the Agency had already begun when the PMA was published, this shared services effort included. The NSSC effort fit perfectly within the administration's new focus. The PMA seeks performance improvement throughout the government with a focus on spending less on institutional activities so that funds may be allocated to more mission critical projects. The PMA's goal for improvement is founded largely on the performance achievements found in the private sector. Shared services have a long history in both the public and private sectors; however, in recent times growth in the private sector has increased dramatically.

The CBS Study Team's Report assessed the feasibility of the shared services concept at NASA. It concluded that NASA could improve service quality, reduce costs and establish a framework for a continuous improvement culture through the establishment of the NSSC. Upon completion of the study team report, the NSSC Implementation Team was formed to utilize the report as a foundation for further investigation and planning for the NASA Shared Services Center.

## 2.4 Mission of the Implementation Team

The NSSC Implementation Team was tasked to develop an NSSC Implementation Plan that would describe in detail the necessary steps to create an efficient and effective NSSC. The mission of the Implementation Team:

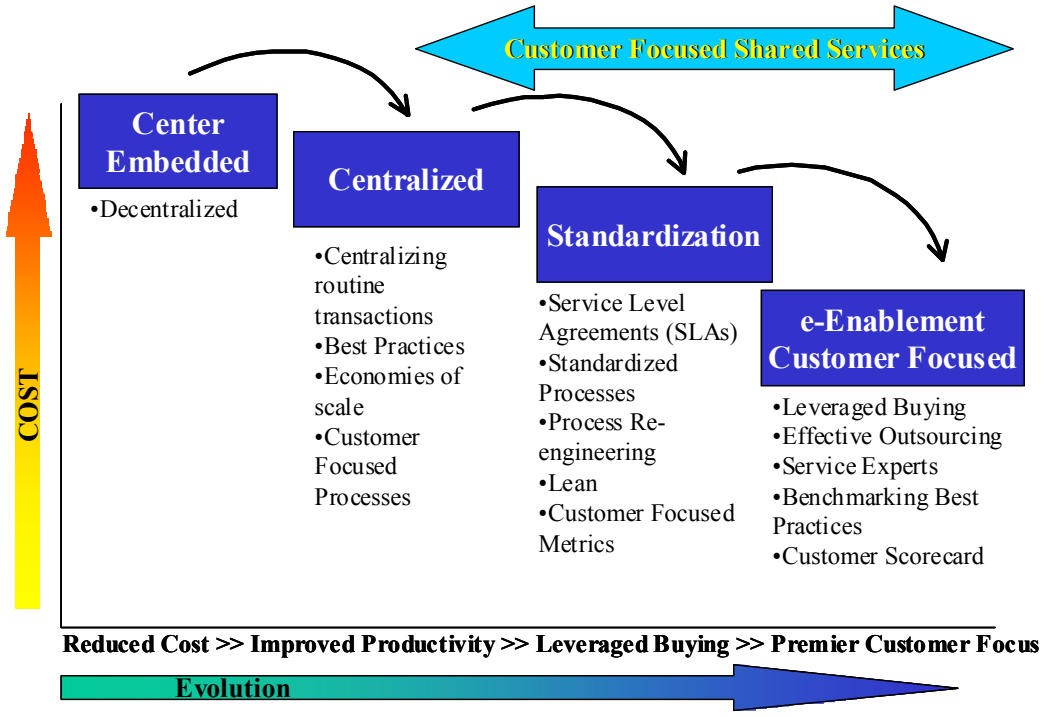
> "To establish a consolidated shared services organization that will provide higher quality, more cost effective and efficient services for selected NASA business and technical services."

## 2.5 Benefits of NSSC

The proposed NSSC would meet the evolving needs of employees and the Agency as a whole, as NASA takes the necessary steps to thrive in increasingly competitive economic and business conditions. The NSSC would improve NASA in numerous ways including: enhanced services, cost efficiencies, enabling the "One NASA" concept, realizing the goals of the President's Management Agenda (PMA) to establish a framework for a continuous improvement culture, and enabling a greater focus on NASA's core mission.

The NSSC also presents opportunities to achieve synergy across functions while achieving a critical mass of "core" expertise to manage and perform shared services. The NSSC would provide a stronger focal point for delivering transactional and specialty services than currently exists. As a result, employees at the Centers would be able to allocate more time to value added and consultative services that provide strategic direction through a more pointed focus on NASA's core missions. In addition to aligning with the Agency's strategic direction, the NSSC would leverage economies of scale, which would provide cost benefits and efficiencies while increasing the quality of work produced. The following chart shows that over time, costs decrease while quality of services increase and become more customer focused within a single site shared services environment.

**Figure 2-1: Evolution of Costs and Customer Services in a Shared Services Environment**




The NSSC would firmly support the "One NASA" vision by offering consistent and higher quality services to employees throughout the Agency. In addition to supporting "One NASA", the NSSC would promote initiatives incorporated in the PMA. Executive direction from the PMA calls for more strategic management of human capital, improved resources management, greater focus on core mission performance, more reliance on competitive sourcing, improved financial management, improved IT systems and electronic government. The implementation of the NSSC would provide a robust foundation for future NASA performance and process improvements.

## 2.6 Proposed NSSC Features

The NSSC would be an addition to NASA's current organizational structure and act as a peer with existing NASA Centers. The NSSC would initially consolidate sub-sets of HR, Procurement, Financial Management, and IT functions into a new organization. It is anticipated that other functions within these areas as well as additional services from other functional and specialty activities be integrated into the NSSC at a later date (i.e. patents, security, logistics, legal, aircraft, and environmental). As a result of the Agency's implementation of IFMP, the NSSC would promote standardized, reengineered and improved processes, operated by NASA and contractor personnel. The NSSC would foster a dynamic environment based on continuous performance and process improvement.

## 2.7 Methodology Overview

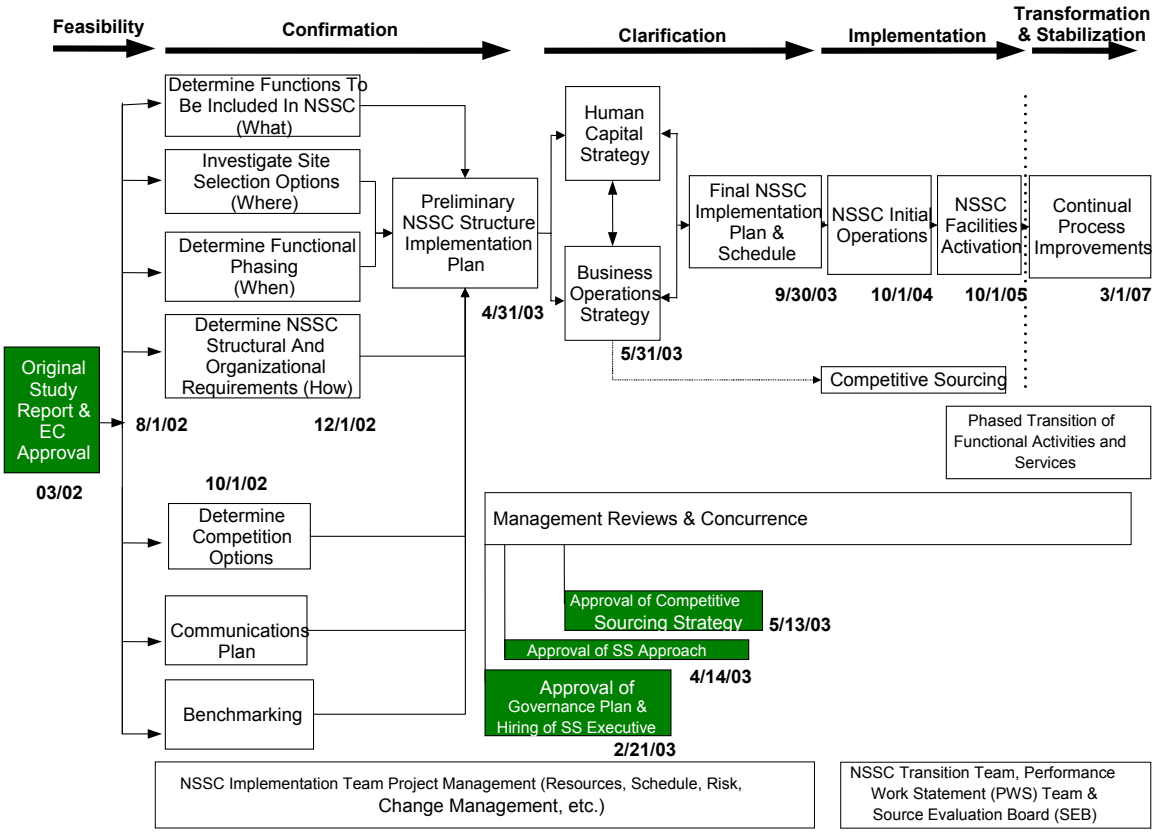
The NSSC Implementation Team adopted a proven methodology to ensure a thoughtful and thorough examination of all issues pertaining to consolidation. The methodology demonstrates the rationale supporting the process and depicts the timing of events, both past and present that would be necessary to successfully manage the NSSC project from beginning to end. (See Appendix A for a full discussion of the Methodology)

The five stages of the methodology utilized throughout the NSSC project are as follows:

- **Feasibility: Determine that a Shared Services Center merits further investigation**
- **Confirmation: Confirm that it is viable to implement shared services**
- **Clarification: Develop an implementable and viable solution**
- **Implementation: Implement operational change successfully**
- **Transformation & Stabilization: Stabilize change and identify and implement continual process improvements**

The following table depicts the overall NSSC Project Plan with an overlay of the five stages of the NSSC methodology.

**Figure 2-2: NSSC Project Plan Overview**




## 2.8 "Confirmation" and "Clarification" of the NSSC

The Implementation Team's work and progress to date on the NSSC project has taken place within both the "Confirmation" and "Clarification" stages in the NSSC methodology. The following discussion breaks down the "Confirmation" stage into the four primary questions that were answered during the "Confirmation" stage: "What", "Where", "When", and "How". "What" and "When" focus on which functional activities or services are candidates for migration along with their respective phasing into the NSSC. "Where" determines the location of the future NSSC. The "How" aspect encompasses governance, structure and reporting flows incorporated into the NSSC.

During the "Clarification" stage of the NSSC methodology, the Implementation Team conducted research and performed analysis to further develop a viable solution for the NSSC. The Human Capital Strategy and the Business Operations Strategy are the two primary areas developed during the "Clarification" stage. This Final Implementation Plan contains the output from the conclusion of the "Clarification" stage.

## 2.8.1 Confirmation Stage

### 2.8.1.1 Determine Functions to Be Included in NSSC (What)

Activities in this stage are directed at identifying which functional processes, activities and tasks are candidates for transition to the NSSC. The "Confirmation" stage has also identified those functional processes, activities and tasks that should remain at the individual Centers. Using the Original Study Team Report as a starting point, the Implementation Team reviewed six functional areas: Human Resources (HR), Financial Management (FM), Procurement, Resources Management (RM), Information Technology (IT), and Facilities. Subteams of subject matter experts in each of the six functional areas were assembled from across NASA Centers and Headquarters. (See Appendix J for a comprehensive list of Team Members)

Each functional subteam was tasked to:

- Identify functions performed at all Centers and facilities
- Establish a baseline of current and future costs and resource requirements
- Categorize current functions into "Services to be Consolidated," "More Study Needed," or "Services Remaining at Centers"
- Validate candidate functions through NASA subject matter experts and external benchmarking
- Identify phasing and interdependencies/qualifiers for implementation

**Summary of Functional Areas under Review**

The Implementation Team examined the following six functions in detail over a period of eight months: Human Resources, Financial Management, Procurement, Resources Management, Information Technology and Facilities. These six functions were examined in detail to determine which functional activities are candidates for transition to the NSSC. Each functional subteam identified functional activities to migrate, baseline of FTEs performing these functions, percent of baseline transitioning, costs and cost savings. The results of this analysis were then further validated internally by NASA subject matter experts, and externally through benchmarking visits.

Through the NSSC, the NASA community would benefit from consolidating functional activities that currently exist separately at each individual Center, at a single location. Over time, due to locating the functional activities in a single community, expertise would continue to increase creating further efficiencies throughout the NSSC.

**Human Resources**

The Human Resources Subteam identified 35 out of 49 total functional activities under review as candidates for migration to the NSSC. These 35 functional activities identified as NSSC candidates may be organized into the following five functional categories: Personnel Program Support, Employee Development/ Training Programs Support, Employee Benefits and Services, Human Resource Information Systems and Reports, and Personnel Action Processing and Record Keeping. Those activities remaining at the Centers would include the following

categories: Strategic Human Capital Leadership and Planning, Workforce Planning and Analysis, Workforce Recruitment and Retention, Workforce and Leadership Development and Capability Building, Employee Commitment and Workplace Environment, and Strategic Management of NASA's HR Community. The Management Education Center located at Wallops Flight Facility was identified as an area that required further study for possible migration to the NSSC.

The 35 candidate functions propsed for migration represent approximately 27% of the total baseline Contractor and Civil Service FTEs for the HR function across the Agency. Initial analysis indicates that the NSSC would reduce aggregate HR salary dollars and associated costs from $12.7M to $9.8M, an annual cost savings of approximately $2.9M (23%). (See Appendix B)

**Procurement**

The Procurement Subteam identified 43 out of over 100 total functional activities under review as candidates for migration to the NSSC (later combined to total 29). These 43 functional activities identified as NSSC candidates may be organized into the following four functional categories: Transactional Services, NSSC Major Contracting Operations, Workforce Development & Management Operations, and Procurement Electronic Business Systems. Those activities remaining at the Centers may be organized into the following categories: Policy and Strategic Support and Center-Specific Mission Procurements. The Procurement Subteam also identified the category entitled "Subcategories of Simplified Acquisition Procurements" that would require further study to determine their NSSC candidacy.

The 43 candidate functions proposed for migration represent approximately 15% of the total baseline Contractor and Civil Service FTEs for the Procurement function across the Agency. Initial analysis indicates that the NSSC would reduce aggregate Procurement salary dollars and associated costs from $12.5M to $11.4M, an annual cost savings of approximately $1.1M (9%). (See Appendix C)

**Financial Management**

The Financial Management Subteam identified 14 functional activities as candidates for migration to the NSSC. Those services proposed to be consolidated include: Accounts Payable (Payroll, Travel, Vendors), Payments Certification, Payroll, Time and Attendance, Labor Processing/Distribution, Accounts Receivable (Billing and Collection), Reimbursable Collections and Closeouts, Financial Reporting (General Ledger, Treasury 224, NF 1018s), and Internal Reviews for the NSSC/Finance Organization. Those functional activities that would remain at the Center level may be categorized as Fund Control, Reconciliations to GL and Subsidiary Accounts, Rate Development, Business Process Leads, SAP super-users Core Finance, Budget Execution Activities, Labor System Accounting and Control, Service Pool Accounting and Operations, Validation of Receipts, Personal and Real Property, Cost Estimation, Pricing Analysis, Center Internal Reviews, Asset Validation and Evaluation, Center Financial Statements, 533 Cost Analysis, Systems Accounting and General Administration and Policy Training. Finally, those activities that need more study before a decision may be made

concerning their NSSC candidacy may be categorized as Property Accounting, Posting of Contractor 533 Cost Input and Travel Ticketing and Reservations.

The 14 functional activities proposed for migration represent approximately 44% of the total baseline Contractor and Civil Service FTEs for the Financial Management function across the Agency. Initial analysis indicates that the NSSC would reduce aggregate Financial Management salary dollars and associated costs from $18M to $13.4M, an annual cost savings of approximately $4.6M (25%). (See Appendix D)

**Resources Management**

The Resources Management Subteam identified several functional activities that could prove to be NSSC candidates upon further study. The following activities should be reviewed after some experience with IFMP to determine if they are viable candidates: Independent Agency-Level Cost Estimating, Initialization of Cost Accruals, Centralized Agency Budget Database Entry and Edit, Transactional Aspects of Reimbursable Agreements, Funds Distribution, and Funding of Purchase Requests. Those functional activities that would remain at the Center level fall into the following categories: Budget Formulation, Budget Justification, Budget Execution (most transactional activities already implemented in IFMP), Program Analysis, and Cost Estimating. The RM Subteam did not identify any activities that would be consolidated during the initial phase of the NSSC. (See Appendix E)

**Information Technology**

The Information Technology Subteam has currently identified 15 services as candidates for migration to the NSSC. These services have already been consolidated as shared services under the NASA CIO. These IT services fall under the following three categories: IFM Competency Center Services, NASA Computing and Communications Services, and ODIN Program Services. Those services that would remain at the Center level fall under the umbrella of Program & Mission Unique IT Operations. The IT Subteam also identified the following services that require further study before a decision may be made concerning their NSSC candidacy: Calendaring, Pagers, Cell Phones, Print/Fax/Copier Services, Public Web Hosting, Web Shop, Document Management, Non NISN ISP, Competency Management Systems and Asset Management Systems.

Due to the dynamic nature of the Information Technology environment and on-going consolidation activities, the number of FTE currently performing the candidate functional services prior to consolidations was not available for this report. Overall the IT community would not experience a reduction in total Civil Service and Contractor FTEs in those functional services slated for the NSSC. However, the goal is to transform the Agency's ten information architectures into a single Agency architecture. The inherent nature of the IT function lends itself to serve as a major facet of the NSSC. NSSC IT Services would be provided via a virtual organization with matrixed support at several Centers. (See Appendix F).

**Facilities**

The Facilities Subteam reviewed approximately 180 functional activities to identify functional activities that may be candidates for transition to the NSSC. The Facilities Subteam reached the

conclusion that no Facilities functional activities should migrate to the NSSC. However, the Facilities Subteam recognized that with the advent of IAM and standardized practices, with other changes in technology, or an increased NSSC orientation and scope, it might be possible to transition some functions in the studied areas to the NSSC. The activities in this category are: Construction of Facilities, Locally Approved Construction/Modification, Facility Planning and Design, Maintenance, Real Property Management, and Master Planning. Activities remaining at the Centers are "Advisory- Program/Center Unique Services." Further, it is important to note that the Facilities Subteam did not review other functional areas of asset management. (See Appendix G)

**NSSC Consolidated Characteristics Matrix**

The six functional subteams collected comprehensive data, reviewed functional characteristics (both qualitative and quantitative) and conducted robust analysis to arrive at a decision as to whether or not a functional activity was a candidate for migration to the NSSC. The table below summarizes the six functional areas and the functional activities or services that were examined. The functional tasks were placed into three categories:

- **Services to be Consolidated**: These functional activities would migrate to the NSSC from FY06 to FY08.
- **More Study Needed**: Further study could identify tasks within these functions as candidates for NSSC transition.
- **Services Remaining at Centers**: Services remaining at the Centers are more strategic in nature and directly support NASA's missions. These services are best performed at the Centers to maintain effective relations, provide responsive services and gain organizational understanding to enable proactive service delivery.

**Table 2-1: NSSC Consolidated Characteristics Matrix**

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Human Resources**<br>*49 Activities Reviewed* | ■ Personnel Program Support<br>■ Employee Development and Training Support<br>■ Employee Benefits and Services<br>■ HR Information Systems and Report<br>■ Personnel Action Processing & Recordkeeping<br>*(27% of HR FTEs/WYEs)* | ■ Management Education Center at WFF | ■ Strategic Human Capital Leadership and Planning<br>■ Workforce Planning and Analysis<br>■ Workforce Recruitment and Retention<br>■ Workforce and Leadership Development and Capability Building<br>■ Employee Commitment and Workplace Environment<br>■ Strategic Management of NASA's HR Community |
| **Procurement**<br>*109 Activities Reviewed* | ■ Transactional Services (Grants, Cooperative Agreements & SBIR/ STTR Processing)<br>■ NSSC Major Contracting Operations<br>■ Workforce Development and | ■ Subcategories of Simplified Acquisition Procurements | ■ Policy and strategic support<br>■ Center-Specific Mission Procurements |

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| | Management Operations<br>■Procurement Electronic Business Systems<br>*(15% of Procurement FTEs/WYEs)* | | |
| **Financial Management**<br><br>*29 Activities Reviewed* | ■ Accounts Payable (Payroll, Travel, Vendors)<br>■ Payment Certification<br>■ Accounts Receivable (Billing, Collection)<br>■ Payroll, Time & Attendance<br>■ Labor Processing/Distribution<br>■ Financial Reporting (General Ledger, Treasury 224, NF-1018's)<br>■ Reimbursable Accounting (Collections, Closeouts)<br>■ Internal Reviews for NSSC/F office<br><br>*(44% of FM FTEs/WYEs)* | ■ Property Accounting (Real & Personal)<br>■ Posting of Contractor 533 Cost Input<br>■ Travel Ticketing and Reservations function | ■ Fund Control<br>■ Reconciliations to GL and Subsidiary Accounts<br>■ Rate Development<br>■ Business Process Leads<br>■ SAP Super-users Core Finance<br>■ Budget Execution activities<br>■ Labor System Accounting and Control<br>■ Service Pool Accounting and Operations<br>■ Validation of Receipts<br>■ Personal and Real Property<br>■ Cost Estimation (reimbursable, service pool, contracts)<br>■ Pricing Analysis<br>■ Center Internal Reviews<br>■ Asset Validation & Evaluation<br>■ Center Financial Statements<br>■ 533 Cost Analysis<br>■ Systems Accounting<br>■ General Administration and Policy & Training |
| **Resources Management**<br><br>*28 Activities Reviewed* | | ■ Independent Agency-Level Cost Estimating and Independent Review Capability<br>■ Initialization of Cost Accruals<br>■ Centralized Agency Budget Database Entry and Edit<br>■ Transactional Aspects of Reimbursable Agreements<br>■ Funds Distribution<br>■ Funding of Purchase Requests | ■ Budget Formulation<br>■ Budget Justification<br>■ Budget Execution (most transactional activities already implemented in IFMP)<br>■ Program Analysis<br>■ Cost Estimating |
| **Information Technology**<br><br>*37 Activities Reviewed (plus sub-functions)* | ■ IFM Competency Center Services<br>■ NASA'S Computing and Communications Services<br>■ ODIN Program Management Services | ■ Calendaring<br>■ Pagers<br>■ Cell Phones<br>■ Print/Fax/Copier Services<br>■ Public Web Hosting<br>■ Web Shop<br>■ Document Management<br>■ Non NISN ISP | ■ Program-/Mission-Unique IT Operations |

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| | | ■ Competency Management Systems<br>■ Asset Management Systems | |
| **Facilities**<br><br>*180 Activities Reviewed* | | Pending IAM – sub-functions from these functional areas may be able to be transferred:<br>■ Construction of Facilities (construction/renovation and repair)<br>■ Locally Approved Construction/Modification<br>■ Facility Planning and Design Maintenance<br>■ Real Property Management | ■ Advisory - Program/Center Unique Services |
| **Other** | | ■ Legal<br>■ Patents<br>■ Security<br>■ Logistics<br>■ Environmental<br>■ Aircraft<br>■ Integrated Asset Management (IAM)<br>■ Export Control<br>■ Property<br>■ Customer Assurance and Analysis | |

### 2.8.1.2 Determine Site (Where)

Site (locale) selection is one of the most important factors when planning and implementing a shared services environment. At this time a preferred site has not been identified.

Before the site is selected, the National Environmental Policy Act (NEPA) review must be completed. Due to the overall scope of the NSSC project, an Environmental Impact Statement, including the requisite public process may have to be completed. Specific siting of the NSSC facility would be accomplished in accordance with Agency procedures and requirements under the Rural Development Act (RDA) (7 USC § 2204b-1), and other Federal and NASA policies, directives and guidelines.

### 2.8.1.3 Determine Functional Phasing (When)

To ensure a smooth transition to the NSSC, the functional activities would have to migrate at the correct time relative to their overall functional area and the other functional activities. After the NSSC management structure is in place, the migration of functional activities to the NSSC

would commence. The NSSC Implementation Team identified three 'waves' of functional phasing:

- Initial Operations – October 2004
  - Operational services under the NASA Computing and Communications Services (NCCS) umbrella would be virtually consolidated at this time.
- NSSC Facility Activation – October 2005
  - The NSSC would determine the physical location to house the functional activities initially migrating to the NSSC
- Phased Transition of Activities – October 2005 through October 2007
  - Those functional activities identified as candidates for migration to the NSSC would begin their scheduled migration into the NSSC

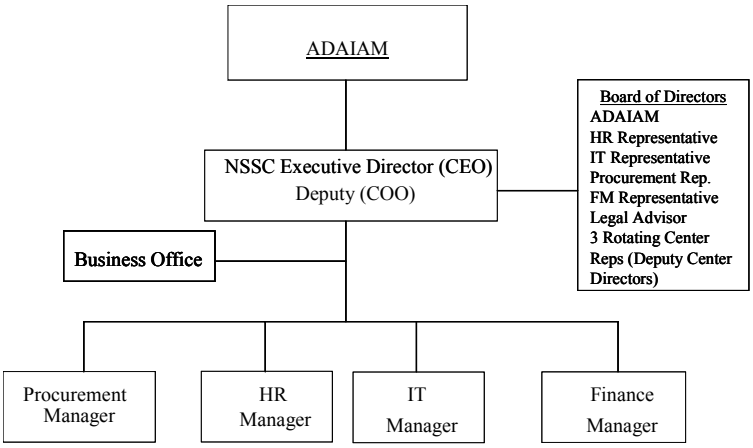
Many of the phasing issues are conditional upon the successful implementation of IFMP. Also, to determine into which phasing wave a functional activity falls; the interrelationships between that functional activity and other processes must be fully assessed. To develop a final phasing schedule, the development of workflow processes for the functional processes migrating to the NSSC would be required.

#### 2.8.1.4 Determine NSSC Structural and Organizational Requirements (How)

In the last phase of the "Confirmation" stage, the Implementation Team answered the question "How." Prior to any facet of the Implementation Plan being put into motion, a Competitive Strategy selection is required. Competitive Strategy and long-term continuous performance improvements are important to the President's Management Agenda. After careful consideration of the limited alternatives, the Implementation Team recommended that NASA conduct a public-private competition under the guidance of OMB Circular A-76. (See Appendix A.6.2 for more on Competitive Strategy)

Another major decision that would affect the NSSC at all phases of its lifecycle is how the NSSC is organized and governed. The following chart depicts the initial organizational structure for the NSSC. (See Appendix H for more on Governance)

**Figure 2-3: Proposed Internal NSSC Management Structure**




**Functions**
**Review & Approve:**
- Strategic Direction
- Establish Policy
- Customer Advocacy and Communication
- Establish Metrics and Key Performance Indicators
- Evaluate CEO & COO

Looking forward, the NSSC project must adequately address Change Management (see Appendix A.6.6 for more on Change Management and Communication Strategy) and Risk Management (see Appendix I for more on Risk Management and Critical Success Factors).

The end product of the second stage, "Confirmation", was the Preliminary NSSC Implementation Plan. The Preliminary Implementation Plan provided the foundation for the third stage, "Clarification".

### 2.8.2 "Clarification" Stage

Upon completion of the "Confirmation" stage, the Implementation Team began the "Clarification" stage. The two primary focal points of this stage were the development of a comprehensive Human Capital Strategy as well as the Business Operations Strategy. The comprehensive development of both of these strategies is critical to the success of the NASA Shared Services Center.

#### 2.8.2.1 Human Capital Strategy

The Human Capital Strategy (HCS) addresses the "people" portion of the Implementation Plan. To address the Human Capital issues, the Implementation Team developed the following plans to be used during transition to NSSC: 1) a comprehensive Staffing Plan to identify positions and grade levels along with a timeline for filling these positions at the NSSC, 2) a Training Checklist that determines the training needs for the NSSC staff for transition to a shared services environment, and 3) Tools for Centers to use for workforce planning.

##### 2.8.2.1.1 Staffing Plan

The NSSC Staffing Plan includes the number of Civil Service FTEs and Contractor WYEs transitioning to the NSSC for each of the functional areas. In addition, the Staffing Plan identifies when each of these FTEs and WYEs would physically transfer to the NSSC

To determine approximate staffing levels in the NSSC vision state, the subteams gathered data and developed future costs and resources profiles for those functions to be consolidated. The Implementation Team also worked with data collection efforts from previous NSSC activities to better understand the requirements for staffing the NSSC. The FTEs and WYEs forecasted in the Staffing Plans are proposed numbers and may change over time due to the ongoing Procurement process. More details on the Staffing Plans may be found in Appendix A.3.1.1.

#### 2.8.2.1.2 Training Plan

To ensure that the NSSC transition is successful, NASA must address the issue of training for the new shared services environment. To reinforce the "One NASA" concept, the NSSC would have a similar overview of the fundamental training philosophy as the IFM Program. The following excerpt is adapted from the "NASA Integrated Financial Management Program Learning Strategy" document.

> The education and training of NASA staff – to perform new tasks, use new technology, fulfill new roles, and engage in new work behaviors – will be critical to the success of the NSSC Program. NASA staff currently possess a variety of skills, knowledge, and abilities that they can naturally transfer to the new ways of working that NSSC will entail. However, it is expected that as the organization and nature of some areas of work change, varying degrees of education and training will be required to help some staff members develop new skills and learn new ways of working.

The NSSC Implementation Team developed a "Sample Orientation Training Checklist" that proposes guidelines and requirements for those employees transferring to the NSSC environment. At the NSSC, the supervisor of the transferring employee is responsible for providing the required training necessary to orient the employee to the new position and the shared services environment. The following table displays the checklist of required training or orientation topics appropriate for the majority of Civil Service positions at the NSSC.

**Table 2-2: Sample NSSC Orientation Training Checklist**

| TRAINING REQUIREMENT | TYPE OF TRAINING | DURATION OF TRAINING | TRAINING COMPLETED (Check Mark) | NON-APPLICABLE, IF NOT REQUIRED |
|---|---|---|---|---|
| Basic Information Technology (IT) Security Awareness and Training | CD-ROM or SOLAR | 1 hour | | |
| Business World | OJT | 1 hour | | |
| Business System Manual (BSM) | OJT | 1 hour | | |
| Organization Business Objectives and Agreements (BOA) | OJT | 1 hour | | |
| Performance Plan (Accomplishments) | OJT | 1 hour | | |
| Competency Management System (Profile) | OJT | 1 hour | | |
| Safety and Health Training | PowerPoint Presentation | 1 hour | | |
| Orientation to work site | OJT | 1 hour | | |
| Safety Orientation | OJT | 1 hour | | |
| Orientation to assigned work | OJT/ Shadowing | Variable | | |
| Schedule Area Access (if needed) | Class or Video | Variable | | |
| Relevant Procedures/Training: | | | | |
| NSSC-T-0001 NASA Orientation | Class or Video | 1 hour | | |
| NSSC-T-0002 Customer Service Training | Class or Video | 2 weeks | | |
| NSSC-T-0003 WCF – Budget Formulation | Class/OJT | 1 week | | |
| Center Rotational Assignment | NASA Center | 1 month | | |
| NASA Headquarters Rotational Assignment | NASA HQ | 1 month | | |
| Relevant technical, program, or project policies/guidelines | OJT | 1 hour | | |

More information concerning the NSSC Sample Orientation Training Checklist and related guidelines may be found in Appendix A.3.1.2.

### 2.8.2.1.3 Impacted Personnel Toolkit

To help ensure a smooth transition to the NSSC, the Implementation Team recommended that the Agency establish an NSSC Steering Council comprised of the Associate Deputy Administrator for Institutions and Asset Management, the Executive Director, the Agency functional owners for human resources, procurement, financial management and information technology. The role of the Steering Council includes the following:

- Advocate and support NSSC mission
- Communicate plans to the centers
- Establish link between HQs and center management/employees
- Establish/approve NSSC policies, procedures, rates
- Establish governance structure

The Implementation Team also recommended the establishment of Center Transition Teams. The Center Transition Teams would be comprised of: functional managers in Human Resources,

Procurement, Financial Management, Information Technology and a change management point of contact The team would have the following responsibilities:

- Identify civil service positions and employees affected by the NSSC
- Incorporate these positions into Center workforce planning activities beginning as early as possible to develop future plans for those affected employees.

Center Transition Teams' activities related to affected employees will be coordinated at the Agency level by the Human Resources Advisor appointed by the Competitive Sourcing Official in keeping with OMB Circular A-76. Other key responsibilities of the Center Transition Team follow:

- Communicate plans to center employees
- Develop & implement plans for remaining workforce
- Determine if organizational adjustments are needed
- Communicate center requirements to NSSC
- Concur with service level agreements
- Ensure no "gaps" between work transferred and work remaining at centers
- Provide functional support to Change Management team

The Implementation Team developed some potential options for those civil servants affected by the transition to the NSSC. Those options are listed as follows:

- Reassignment to the NSSC as civil servants performing inherently governmental work
- Serve as Customer Service Representatives at the Centers
- Find employment by NSSC contractor(s)
- Be reassigned to existing Center/Agency vacancies for which they are qualified
- Retrain/refocus into other Center positions

The following are tools that may assist Centers in managing their workforce issues. The list of Tools follows:

- Targeted buyout opportunities
- Targeted early out opportunities
- Reinstitute Agency "Career Transition Assistance" program
- Right of First Refusal for civil service employees if work currently performed by those civil servants is converted to contract (in accordance with FAR 7.305©

#### 2.8.2.2 Business Operations Strategy

The second facet of the "Clarification" stage consists of the Business Operations Strategy (BOS). As part of the BOS, the Implementation Team identified the approach for the development of workflow processes and the development of performance metrics, as well as the NSSC Funding Strategy and a framework for Service Level Agreements.

#### 2.8.2.2.1 Development of Workflow Processes

To assess functional phasing by determining interrelationships between other processes, the Subteams with activities transitioning to the NSSC were engaged to develop Supplier, Input, Process, Output, Customer (SIPOC) diagrams for each activity moving to the NSSC. The purpose of the SIPOC diagrams was to assess functional phasing and to identify potential risks, to provide valuable information on the interdependencies and interfaces of the activities, to identify those parties involved along with their capacity, and to validate and strengthen initial conclusions on activities from an FTE/WYE perspective. The SIPOCs also provided a means to standardize data collection across the functional teams and to provide the NSSC Executive Director detailed summaries of all activities transitioning. Once drafted, the SIPOCs would flow into the Performance Work Statement (PWS) team activities and may be further decomposed into functional deployment maps to show step-by-step hand-offs within each activity.

SIPOC diagrams are a tool to document process flows and interrelationships between activities. Unlike more detailed functional deployment process maps, SIPOCs do not focus on "how the process is completed" rather, they focus on the complex interrelationships between activities, from the perspective of Suppliers feeding Inputs or data into the process, and when the process has completed its activity the Output that gets fed to a Customer. This allows for a one-page summary diagram that uses a variety of different symbols to depict the necessary information. For the sake of this analysis, activities are termed as processes. Using this approach, the NSSC teams were able to develop detailed diagrams for each functional activity that were consistent in form and format across each functional area. (See Appendix A.3.2.1 for more details on the SIPOC Diagrams)

#### 2.8.2.2.2 Development of Performance Metrics Baseline

The development of the performance metrics baseline is a key element of any business transformation effort. Developing a baseline provides an objective, qualitative approach to analyzing how effective the transition to the NSSC will have been. The baseline would be developed to measure the level of performance that currently exists within NASA, for the activities that are transitioning to the NSSC. The same measures would then be recalculated after the transition to the NSSC when the activities have been able to stabilize. These results when compared to the initial baseline show the level of improvement achieved.

Each functional sub-team that developed SIPOCs was involved in the natural follow-on activity of suggesting performance measures that could be used to gauge the performance of activities as they transition to the NSSC. The focus of the metrics was to develop measures aligned with the strategic objectives of the NSSC: Customer Service, Efficiency, Accuracy and Cost.

The suggested measures may be utilized by a variety of different audiences, including: the PWS development team, the Executive Director and functional leaders at the NSSC and the Change Management team.

The PWS development team would further examine, and clarify the measures to populate the agency solicitation. The suggested measures would assist in defining the key areas of the activities as envisioned by the functional sub-team members, and where necessary the measures may be further developed. The Executive Director and the Office of Executive Director Staff may use the suggested metrics as a starting point for development of Service Level Agreements.

The suggested measures include quantity and quality metrics, which the sub-teams believe relate to the fundamental aspect of the transitioning activities. A key to change management is measuring success. The suggested performance metrics may provide the objective measurements necessary to identify improvements or to isolate and resolve problem areas. (See Appendix A.3.2.3 for more details on the Performance Metrics Baseline.)

#### 2.8.2.2.3 NSSC Funding Strategy

The long term strategy for funding NSSC requirements is to charge the centers and NASA Headquarters for the services that they receive based on a usage-driven assessment methodology. Funding requirements through FY2005 will be covered by Corporate G&A. The optimal time to shift to a usage based charging mechanism would be post transition (FY2008). However, due to the size of the funding requirements and the intense pressure on the size of Corporate G&A the Team believes that NASA should establish an Agency table-driven service pool, using SAP capability, starting in FY2006. This approach will result in charges based on the estimated value of service provided to the centers and Headquarters. It will also clearly communicate to the centers their financial commitments through the current budget run-out and encourage them to start planning the transition to the new way of doing business.

Service pool rates will be developed initially at a fairly high level for Procurement, Financial Management, Human Resources and portions of IT. This information will be provided to the centers and Headquarters this Fall for the FY2006 budget planning process. The Executive Director of the NSSC will determine the appropriate time to move to a truly usage driven charging system and may elect to continue with the service pool concept or shift to a Working Capital Fund approach.

The following table identifies the total NSSC funding requirements stated in real year dollars for fiscal years 2005 to 2009.

**Table 2-3: NSSC Funding Requirements ($K)**

| K$ | FY2005 | FY2006 | FY2007 | FY2008 | FY2009 |
|---|---|---|---|---|---|
| Human Resources | $ 634 | $ 3,480 | $ 6,947 | $ 11,819 | $ 12,471 |
| Procurement | $ 756 | $ 9,235 | $ 11,641 | $ 13,806 | $ 14,364 |
| Finance | $ - | $ 7,151 | $ 16,258 | $ 16,276 | $ 16,908 |
| Information Technology | $ 173,067 | $ 187,948 | $ 241,420 | $ 266,547 | $ 279,615 |
| New Requirements | $ 4,382 | $ 7,016 | $ 7,072 | $ 7,355 | $ 7,649 |
| Total | $ 178,839 | $ 214,830 | $ 283,338 | $ 315,803 | $ 331,007 |

#### 2.8.2.2.4 NSSC Service Level Agreements

To ensure that the NSSC provides a level of service that meets or exceeds expectations on the parts of NASA Employees, NASA Centers and other NSSC stakeholders, the NSSC would develop and adhere to Service Level Agreements (SLAs). SLAs are agreements that explicitly

state the operational performance benchmarks the NSSC must achieve to remain in compliance with the service level promises they made to the NSSC stakeholders. A sample SLA is provided in the Financial Management Functional Report.

## 2.9 Benchmarking

**Approach**

Throughout the "Confirmation" and "Clarification" stage, the Implementation Team conducted benchmarking site visits and meetings to revalidate the original Study Team's conclusions while validating the emerging conclusions from the current "Confirmation" stage. The Implementation Team utilized benchmarking to assess the performance and experiences of other public and private organizations that are implementing or have implemented a shared services environment. The benchmarking visits provided concrete examples of how other shared service organizations are organized and managed. The visits also provided insights into how the organization evolved and into issues that may be encountered over time as well as a number of lessons learned.

**Activities**

The Implementation Team visited the following benchmarking sites: Department of Veteran's Affairs (DVA) Financial Services Center (FSC) & Austin Automation Center (AAC), National Oceanographic and Atmospheric Administration (NOAA) Western Administrative Support Center (WASC), the Department of the Interior National Business Center, the Central Intelligence Agency (CIA) and EDS. The Implementation Team also met with representatives from Computer Sciences Corporation (CSC) and Allied Signal to learn more about their experiences with the implementation and maintenance of a shared services environment.

**Lessons Learned**

The shared service site visits and meetings provided great insight into valuable lessons learned and potential challenges with implementing and maintaining a shared services environment. A summary of the applicable lessons learned include:

- Leadership and top management commitment is essential
- Understand agency culture and will to consolidate services before beginning
- Working Capital funding is more desirable than direct appropriations
- Shared Service Centers are more stable and predictable, and less sensitive to political needs
- Customer buy-in is essential – they need to see the benefits
- Effective communication is critical to success
- Baseline current functions/process inputs and outputs to provide standards for shared service functions
- Human capital analysis is key throughout the process
- Critical success factors: Cost reduction, process improvement, human capital realignment, and standard processes & procedures
- Potential for future savings as new services are incorporated and continual efficiencies are realized.

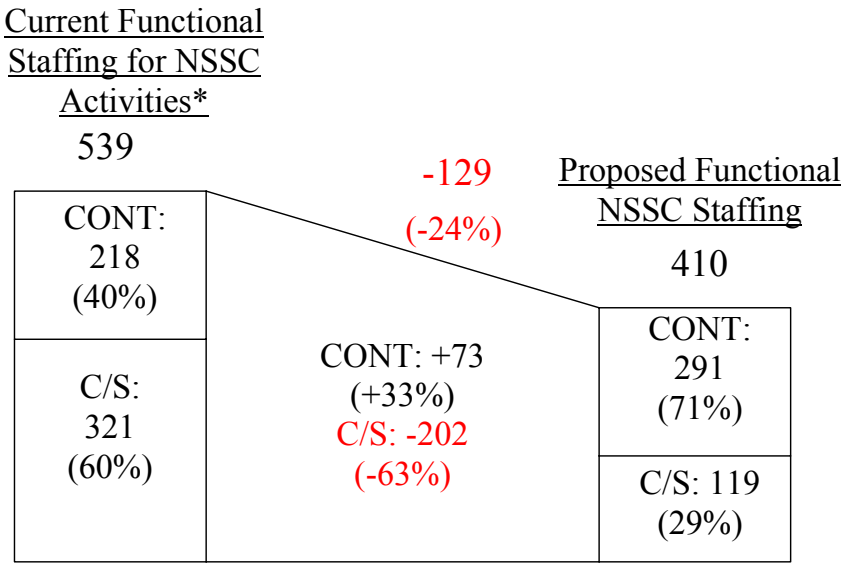
## 2.10 The Bottom Line

Each of the functional subteams conducted independent analysis of their respective functions and its role in the future NSSC. Below is a summary of the functional findings from the subteams detailed by FTEs and costs.

### 2.10.1 FTE/WYE Analysis

The following table displays the current staffing levels (both Civil Service and Contractors) associated with the functional activities or services that are slated for migration to the NSSC. The table also displays the proposed staffing level for the same functional activities or services in the NSSC Vision. Note that the table does not include IT or Office of Executive Director FTE/WYE figures.

**Figure 2-4: Civil Service and Contractor FTEs in Current State and NSSC Vision**




* September 2002 Data

Overall the FTEs would decrease from 539 to 410, which would be a reduction of 129 resulting in approximately a 24% decrease in total FTEs. The Civil Service to Contractor mix in the current state is approximately 60% Civil Service and 40% Contractors. In the NSSC Vision state, the Civil Service to Contractor mix would be approximately 29% Civil Service and 71% Contractors. Note that these percentages are based solely on HR, Procurement, and FM figures, which do not include IT and Office of Executive Director figures.

The following chart depicts the number of NSSC candidate Civil Service and Contractors by Center compared to baseline figures. Note that IT Civil Service and Contractors are not included assuming IT FTEs/WYEs would remain constant in the Current and NSSC Vision state.

**Table 2-4: FTEs and Baseline Figures by Center**

| | HR, Procurement, & FM NSSC Functions by Center | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Baseline* | | | FTEs Identified as NSSC Candidates* | | | Percent of Baseline Identified as NSSC Candidates | | |
| Center | CS | Contractor | Total | CS | Contractor | Total | CS | Contractor | Total |
| ARC | 133 | 42 | 175 | 20 | 24 | 44 | 15% | 57% | 25% |
| DFRC | 48 | 14 | 62 | 7 | 6 | 13 | 14% | 46% | 22% |
| GRC | 144 | 72 | 216 | 43 | 26 | 69 | 30% | 36% | 32% |
| GSFC | 342 | 50 | 392 | 71 | 34 | 105 | 21% | 68% | 27% |
| HQ | 133 | 44 | 177 | 16 | 15 | 31 | 12% | 34% | 18% |
| JSC | 239 | 64 | 303 | 39 | 32 | 71 | 16% | 50% | 23% |
| KSC | 161 | 18 | 179 | 22 | 12 | 34 | 14% | 67% | 19% |
| LARC | 146 | 36 | 182 | 27 | 20 | 47 | 18% | 56% | 26% |
| MSFC | 229 | 85 | 314 | 68 | 40 | 108 | 30% | 47% | 34% |
| SSC | 44 | 13 | 57 | 8 | 9 | 17 | 18% | 69% | 30% |
| Total | 1619 | 438 | 2057 | 321 | 218 | 539 | 20% | 50% | 26% |

* September 2002 Data

The following table displays the number of Civil Service and Contractor FTEs in both the present state and the NSSC Vision by function.

**Table 2-5: Comparison of FTEs in Current State versus NSSC Vision by Function**

| | FTEs Identified as NSSC Candidates* | | | FTEs Forecasted to Perform Functional Tasks at NSSC | | |
|---|---|---|---|---|---|---|
| Function | Civil Service | Contractor | Total | Civil Service | Contractor | Total |
| HR | 79 | 76 | 155 | 21 | 94 | 115 |
| Procurement | 100 | 44 | 144 | 40 | 91 | 131 |
| FM | 142 | 98 | 240 | 58 | 106 | 164 |
| Subtotal | 321 | 218 | **539** | 119 | 291 | **410** |
| IT** | 118 | 553 | 671 | 118 | 553 | 671 |
| **Total** | 439 | 771 | **1,210** | 237 | 844 | **1,081** |

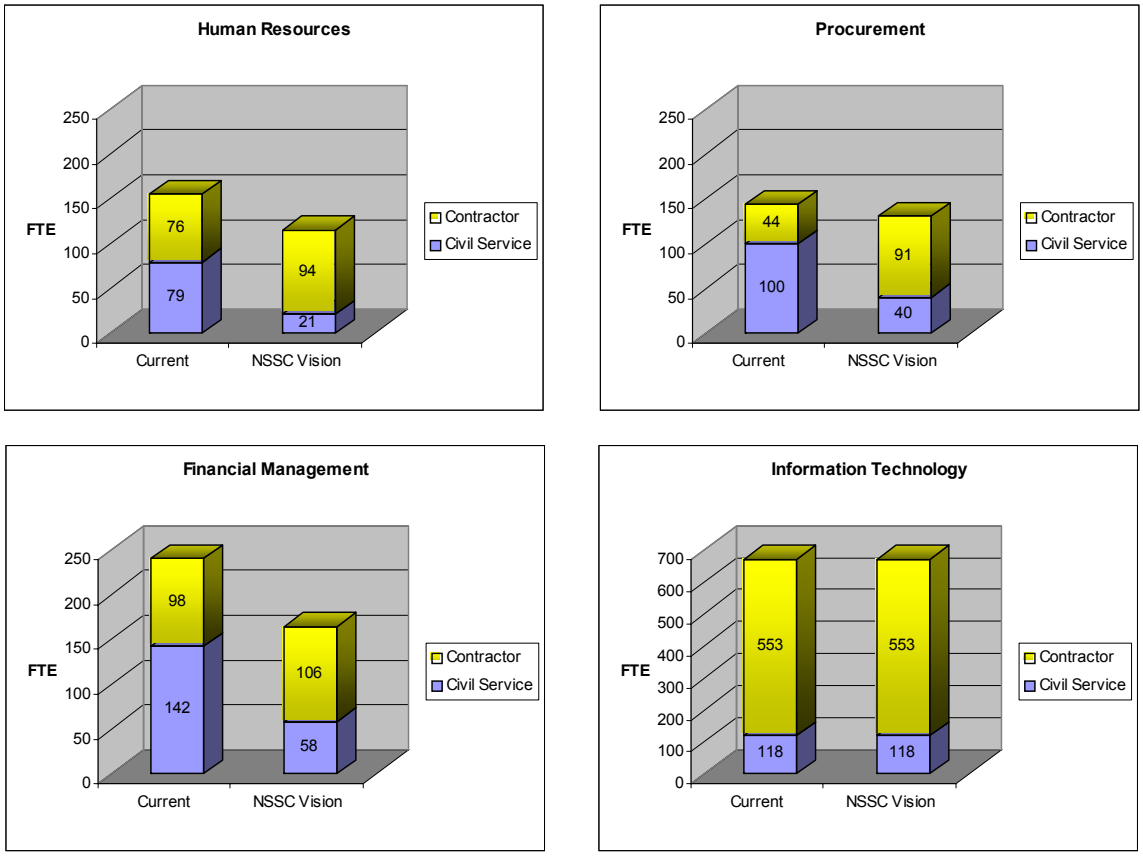
* September 2002 Data

**Assume IT FTEs remain constant in the Current State and the NSSC Vision

Note: Above figures include Directors, Secretaries, and Customer Service Representatives. 5 Customer Service FTEs were assigned to each function. The assigned ratio of Directors/ Secretaries to CS Staff is 1:10 and the ratio for Contractors is 1:20.

The following set of graphs displays by function the breakdown of Civil Service and Contractors in both the current state and the NSSC Vision:

**Figure 2-5: Civil Service and Contractor FTE by Function**




### 2.10.2 Cost Analysis

The Cost Analysis reviewed three main areas: current costs, future (vision) costs and future benefits. The purpose of the analysis was to fully understand how much the NSSC project will cost and how much benefit will be realized. The analysis included:

- Cost for transition and operations of each function
- Associated savings for each function as they transition
- Ten and twenty year net present value (NPV) analyses
- Sensitivity analyses on both labor and non-labor cost elements
- Facility lease analysis in lieu of buying or building new
- Non-recurring costs for facility outfitting, relocation and training

Current costs have been detailed in a baseline developed from the sub-teams' data collection efforts. The baseline describes NASA's current situation and identifies the number and cost of the civil servant and contractor personnel currently performing the functions recommended for transition to the NSSC. Housing and IT desktop related services were included in the analysis.

Vision requirements describe the projected level of resources required at the NSSC at the end of stabilization for the functions currently identified for transition. The forecast also takes into consideration current contract mechanisms and the potential of contract termination costs.

The results of the overall analysis show that the creation of the NSSC is the most economical approach for performing the functions proposed to be consolidated. The analysis indicates a 4.6-year discounted payback period with annual savings starting to accrue in FY2007. Annual cost savings of approximately $6.2M (FY02$) are projected for FY2010 and beyond. The consolidation of procurement, financial management and human resources will result in a workforce reduction of about 24% from the current levels. No savings is being projected for IT at this point (See Appendix A.6.3 for a detailed explanation of the cost analysis).

## 2.11 Conclusion

The implementation of the NSSC would provide NASA with a wide array of tangible and intangible benefits from improved services at lower costs and performance efficiencies, to the support of "One NASA" and the PMA. In addition, the NSSC would act as a catalyst in the promotion of strategic management of NASA resources while it offers more opportunities to develop synergies across functional areas. The NSSC would enable NASA to continually review and reengineer critical processes to constantly improve services provided Agency-wide. The Implementation Team recommends that NASA continue to aggressively pursue continued planning for implementation of the NSSC.

The NSSC Implementation Team reviewed six functional areas within NASA including: Human Resources, Procurement, Financial Management, Resources Management, Information Technology, and Facilities. Within these six functions, the Implementation Team recommended a significant number of functional activities or services for transition to the NSSC. Then the Implementation Team developed: NSSC migration schedule that highlights the various stages of the NSSC Implementation; NSSC governance structure. The NSSC Implementation Team also developed the Human Capital Strategy and Business Operations Strategy that would provide invaluable guidance to the NSSC as it transforms from a concept into a reality.

NASA can improve business service effectiveness and efficiency by consolidating key business and technical services into a shared services environment. The NASA Shared Services Center should be implemented to promote these and other Agency and government management improvements. The NSSC would also promote continual Agency performance and process improvements while maintaining a stronger focus on core mission. These along with cost savings, increased services, promotion of "One NASA" and supporting the PMA support the NSSC Implementation Team's recommendation to aggressively pursue continued planning for implementation of a shared services center for NASA.

# Appendices for NSSC Preliminary Implementation Plan

## Appendix A: Methodology

The following is a discussion of the methodology used throughout the implementation of the NSSC. These details of the methodology support the highlights from the main text.

## A.1 Feasibility: Determine that a Shared Services Center is Feasible and Merits Further Investigation

The CBS Study Team completed the "Feasibility" stage. The end product was the Study Team Report entitled "Consolidated Business Services: A New Opportunity for Better Services" dated March 2002.

## A.2 Confirmation: Confirm that it is Viable to Implement Shared Services

### A.2.1 Determine Functions to Be Included in NSSC (What)

Activities in this stage were directed at identifying which functional processes, activities and tasks are candidates for transition to the NSSC. The "Confirmation" stage also identified those functional processes, activities and tasks that should remain at the individual Centers. Using the initial Study Team Report as a starting point, the Implementation Team reviewed six functional areas: Human Resources (HR), Financial Management (FM), Procurement, Information Technology (IT), Resources Management (RM), and Facilities. Subteams of subject matter experts in each of the six functional areas were assembled from across the nine NASA Centers and Headquarters. Each subteam was tasked to:

- Identify functions performed at all Centers and facilities
- Establish a Baseline of current and future costs and resource requirements
- Categorize current functions into "Services to be Consolidated", "More Study Needed" or "Services Remaining at Centers"
- Identify phasing and interdependencies/qualifiers for implementation

To perform the tasks, most subteams created templates to standardize the data collection efforts. In addition to the quantifiable data, most subteams collected qualitative data such as functional predecessors and interdependencies to assist them in the decision making process. After the data was collected, it was then reviewed, revised, and normalized. This functional data was then used to help determine which of the functional activities or services under review would pose as good candidates for transition to the NSSC. Cost and resource profiles for each function were also created. Subteams collected quantitative data such as Civil Service and Contractor FTEs along with associated salary data. To determine approximate staffing levels in the NSSC vision state, the subteams also developed future costs and resources profiles for those functions to be consolidated

### A.2.2 Determine Site (Where)

At this time, no determination has been finalized on the location of the NSSC site.

### A.2.3 Determine Functional Phasing (When)

To ensure a smooth transition to the NSSC, the functional activities must migrate at the correct time relative to each other and the other functional activities. After the NSSC management team is in place, the NSSC would begin the functional phasing of the NSSC activities. Currently the NSSC Implementation Team has identified three 'waves' of functional phasing:

- Initial Operations – October 2004
  - Operational services under the NASA Computing and Communications Services (NCCS) umbrella would be virtually consolidated at this time.
- NSSC Facility Activation – October 2005
  - The NSSC would determine the physical location to house the functional activities initially migrating to the NSSC
- Phased Transition of Activities – October 2005 through October 2007
  - Those functional activities identified as candidates for migration to the NSSC would begin their scheduled migration into the NSSC

Many of the phasing issues rest on the successful implementation of IFMP. Also, to determine into which phasing wave a functional activity falls, the interrelationships between that functional activity and other processes must be fully assessed. An important event that must take place prior to developing a final phasing schedule is the development of workflow processes for the functional processes migrating to the NSSC. A more detailed discussion of these workflow process mappings may be found in the Business Operations section.

### A.2.4 Determine NSSC Structural and Organizational Requirements (How)

In order to determine how the NSSC would be structured and operated, the following steps were identified:

- Determine how the new organization would be governed
- Develop an NSSC Charter
- Develop composition of Board of Directors for the NSSC
- Identify fiscal and regulatory issues that need to be observed
- Determine the composition and selection criteria for the NSSC Executive
- Develop a financing strategy
- Establish how the new entity would be led, managed and structured (organization)

The end product of Stage Two was the Preliminary NSSC Implementation Plan that was released for publication in April 2003. The Preliminary Implementation Plan provided the foundation for the third stage, "Clarification'.

## A.3 Clarification: Develop an Implementable and Viable Solution

The most recent stage completed by the Implementation Team was the "Clarification" Stage. The two primary focal points of this stage are the development of a comprehensive Human Capital Strategy as well as the Business Operations Strategy. The Human Capital Strategy addresses the sensitive issues surrounding the impact on the people of NASA. The Business Operations Strategy focuses on the following aspects: development of workflow processes, development of performance metrics, development of an NSSC Funding Strategy and the development of a framework for Service Level Agreements. The comprehensive development of both of these strategies would be critical to the success of the NSSC.

## A.3.1 Human Capital Strategy

The Human Capital Strategy (HCS) addresses the "people" portion of the Implementation Plan. The success of the NSSC would depend upon appropriate levels of retention of current civil service and contractor workforce; appropriate new staff levels; transition support to the new environment; and the minimization of impacts on civil service workforce not transferring to the NSSC. The Implementation Team developed a Staffing Plan, a Training Checklist and an Impacted Personnel Toolkit to address the Human Capital issues.

### A.3.1.1 NSSC Staffing Plan

#### A.3.1.1.1 NSSC Staffing Plan Approach

An important part of the NSSC Human Capital Strategy is the NSSC Staffing Plan. The NSSC Staffing Plan includes the number of Civil Service FTEs and Contractor WYEs transitioning to the NSSC for each of the functional areas. In addition, the Staffing Plan would also identify when each of these FTEs and WYEs would physically transfer to the NSSC.

To determine approximate staffing levels in the NSSC vision state, the subteams gathered data and developed future costs and resources profiles for those functions to be consolidated. The Implementation Team also worked with data collection efforts from previous NSSC activities to better understand the requirements for staffing the NSSC. The FTEs and WYEs forecasted in the Staffing Plans are proposed numbers and may change over time due to the ongoing Procurement process.

#### A.3.1.1.2 NSSC Staffing Plan Process

To gather data in a consistent manner, a standard template was developed to capture each of the functional subteams' information. An example of one of these templates is displayed below.

**Table A-11: Staffing Plan Template**

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Equivalent Civil Service Grade Range | Projected Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| | | TOTAL CONTRACTOR ESTIMATE: | 0 | | | |

Each of the subteams completed two of the templates above, one for the Civil Service workforce and another for the Contractor workforce. As may be noted from above, the subteams' submitted data concerning the 'Job Title', a 'Brief Description of Work' the '# of Positions Required', the Equivalent Civil Service Grade Range', the 'Projected Need Dates at NSSC', and the 'Potential for Consolidation with other NSSC Work'.

Note that in some instances, the functional subteams submitted a range of grade levels or transition dates for a particular position. In these instances, the FTES or WYEs were equally allocated across the range of GS Levels or the transition dates. For example, imagine that a functional subteam submitted the data that there are 4 CS FTEs with GS Levels ranging from 10-11 and that they transition over in 2005Q3 & 2005Q4. The interpretation of this information is that there would be 1 GS10 and 1 GS11 transitioning in 2005Q3 along with 1 GS10 and 1 GS11 transitioning in 2005Q4. This assumption underlies all of the functional subteams' Staffing Plan templates.

### A.3.1.1.3 NSSC Staffing Plan Output

**Civil Service NSSC FTE/WYE Analysis**

Once the completed templates were submitted, an integrated Staffing Plan was developed. From this integrated Staffing Plan, the Implementation Team was able to perform analysis and determine the composition of the future workforce needed by the NSSC, both Civil Servants and Contractors.

The following table displays the forecasted number of Civil Service FTEs and Contractor WYEs needed at the NSSC to support the range of functional activities migrating to the NSSC. Note that Supervisors/Directors, Secretaries, and Customer Service Representatives are included in the figures. To determine the number of Directors and Secretaries needed, the Implementation Team utilized the ratio of 1 Director/Secretary per every 10 Civil Service FTE and 1 Director/Secretary per every 20 Contractor WYE.

**Table A-12: Staffing Plan FTE/WYE Summary**

| | CS FTEs | Contractor WYEs | Total FTEs + WYEs |
|---|---|---|---|
| Human Resources | 21 | 94 | 115 |
| Procurement | 40 | 91 | 131 |
| Financial Management | 58 | 106 | 164 |
| Information Technology | 26 | 20 | 46 |
| Executive Director | 14 | n/a | 14 |
| **Total** | **159** | **311** | **470** |

A total of 159 Civil Service FTEs would be needed at the NSSC which brings the total Civil Service percentage of the NSSC to 34%. The other 311 (66%) WYEs transferring to the NSSC would be comprised of Contractor WYE. Note that these figures include IT and OED figures. The following chart displays when the NSSC FTEs would be needed at the NSSC.

**Table A-13: Staffing Plan CS FTE by Function and Fiscal Year/Qtr**

| FY/Q | HR | Procurement | FM | IT | OED | Total |
|---|---|---|---|---|---|---|
| 2003Q3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003Q4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2004Q1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2004Q2 | 0 | 0 | 0 | 0 | 2 | 2 |
| 2004Q3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2004Q4 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2005Q1 | 0 | 0 | 0 | 2 | 6 | 8 |
| 2005Q2 | 0 | 1 | 0 | 7 | 0 | 8 |
| 2005Q3 | 0 | 18 | 0 | 11 | 4 | 33 |
| 2005Q4 | 2 | 0 | 2 | 6 | 0 | 10 |
| 2006Q1 | 12 | 7 | 8 | 0 | 0 | 27 |
| 2006Q2 | 2 | 0 | 33 | 0 | 0 | 35 |
| 2006Q3 | 1 | 2 | 13 | 0 | 0 | 16 |
| 2006Q4 | 1 | 6 | 2 | 0 | 0 | 9 |
| 2007Q1 | 0 | 5 | 0 | 0 | 0 | 5 |
| 2007Q2 | 2 | 0 | 0 | 0 | 0 | 2 |
| 2007Q3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2007Q4 | 1 | 0 | 0 | 0 | 0 | 1 |
| 2008Q1 | 0 | 3 | 0 | 0 | 0 | 3 |
| 2008Q2 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | **21** | **40** | **58** | **26** | **14** | **159** |

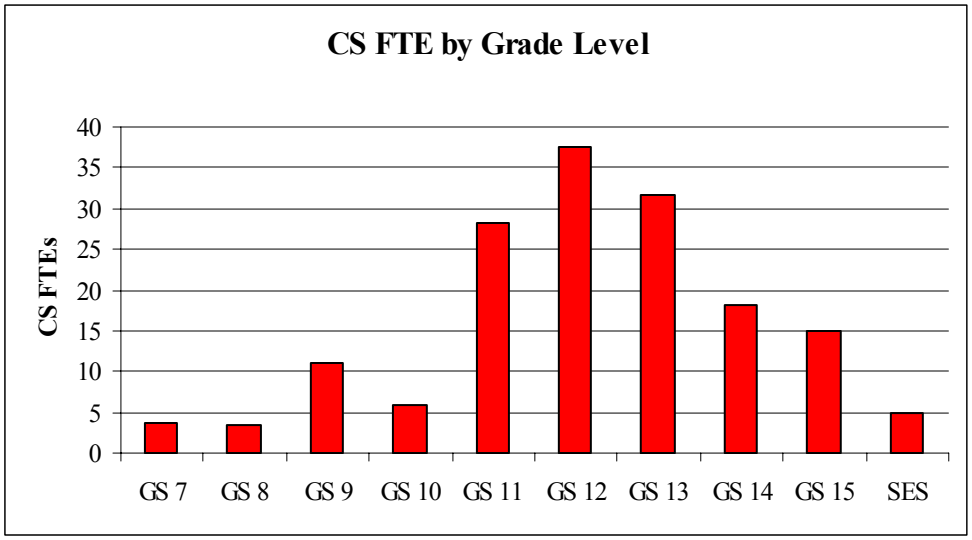
OED = Office of the Executive Director

The above chart is broken out by the functional areas of Human Resources, Procurement, Financial Management, and Information Technology. The Office of the Executive Director (OED) is also included in the chart. From the chart, it may be noted that FTE from the OED are the first who would transfer or be hired, beginning in 2004Q1. This is due to the fact that the

management and accompanying support staff should be in place as soon as possible to build the NSSC from the ground up. The first big wave of FTE transferring to the NSSC would begin in 2005Q3. FTEs would continue to transfer to the NSSC up through 2008Q1.

Another aspect of the Staffing Plan to review is the GS Level of the Civil Service FTEs transferring to the NSSC. The graph below displays the GS Level distribution across the FTEs who would be migrating to the NSSC.

**Table A-14: Staffing Plan CS FTE by Grade Level**




Note: Grade Level forecasts are estimates by the Implementation Team Functional Leads and are subject to change.

From GS 7s to the SES level, the distribution of GS Levels appears to be somewhat normal, though slightly skewed towards the higher levels. The most common levels are GS 12, GS 13, and GS 11 respectively. The GS Levels with the fewest CS FTEs are GS 7s and 8s. All in all, GS 12s comprise approximately 24% of the FTEs, followed by GS 13s at 20% and GS 11s at 18%. On the lower end, GS 7s and GS8s constitute approximately 2% of the total NSSC Civil Service FTE population.

Note that the Transition Team will address the following two issues: 1) differences in Senior level grades across functions and 2) phasing of key personnel.

**Contractor NSSC WYE Analysis**

The analysis for the Contractor WYEs transferring to the NSSC is similar to that performed for the Civil Service FTEs. The following chart displays the WYEs who would be needed at the NSSC.

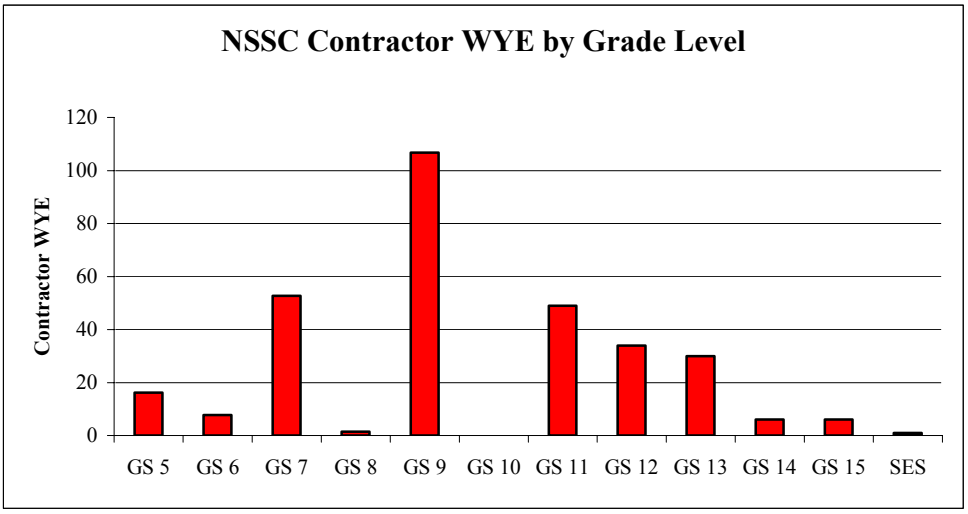
**Table A-15: Staffing Plan WYE by Function and Fiscal Year/Qtr**

| FY/Q | HR | Procurement | FM | IT | Total |
|---|---|---|---|---|---|
| 2004Q2 | 0 | 0 | 0 | 0 | 0 |
| 2004Q3 | 0 | 0 | 0 | 0 | 0 |
| 2004Q4 | 0 | 0 | 0 | 0 | 0 |
| 2005Q1 | 0 | 0 | 0 | 0 | 0 |
| 2005Q2 | 0 | 0 | 0 | 0 | 0 |
| 2005Q3 | 0 | 11 | 0 | 20 | 31 |
| 2005Q4 | 7 | 0 | 1 | 0 | 8 |
| 2006Q1 | 23 | 36 | 8 | 0 | 67 |
| 2006Q2 | 6 | 3 | 35 | 0 | 44 |
| 2006Q3 | 10 | 6 | 62 | 0 | 78 |
| 2006Q4 | 7 | 3 | 0 | 0 | 10 |
| 2007Q1 | 0 | 7 | 0 | 0 | 7 |
| 2007Q2 | 5 | 3 | 0 | 0 | 8 |
| 2007Q3 | 13 | 9 | 0 | 0 | 23 |
| 2007Q4 | 18 | 0 | 0 | 0 | 18 |
| 2008Q1 | 0 | 7 | 0 | 0 | 7 |
| 2008Q2 | 5 | 6 | 0 | 0 | 11 |
| Total | 94 | 91 | 106 | 20 | 311 |

The Contractor WYE chart is similar to the Civil Service FTE chart, however there are some differences. First, the OED does not contain any Contractors in its workforce, only Civil Service FTEs. The Contractor WYE workforce would migrate over to the NSSC in a similar fashion to the Civil Service FTEs. The first wave of WYEs migrating to the NSSC would take place in 2005Q3. A notable issue for the Contractor migration is that after 2006Q3, Procurement and HR would be the only two functional areas with Contractor WYEs still migrating to the NSSC.

The GS Equivalency Level for the Contractors is somewhat different than those submitted for the Civil Service FTEs. The chart below displays the proposed distribution of the NSSC WYEs.

**Table A-16: Staffing Plan WYE by Grade Level**




Note: Grade Level forecasts are estimates by the Implementation Team Functional Leads and are subject to change.

The above chart shows that the Contractor WYEs are not as normally distributed as the Civil Service FTEs were. The majority of the WYEs are equivalent to GS 9s. Note that 34% of the WYEs are forecasted to migrate to the NSSC as GS 9s. GS 11s are the next most common (16%) followed by GS 12s (10%). Note that only 2 GS8s and no GS10s have been forecasted.

### A.3.1.1.4 NSSC Staffing Plans

The following details the Staffing Plan templates for each of the individual functions. The Directors/Supervisors, Secretaries, and Customer Service Representatives are highlighted in pink.

**Table A-17: Human Resources Civil Service Staffing Plan**

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Civil Service Grade Range | Project Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe | Recommendations on Recruiting Sources |
|---|---|---|---|---|---|---|---|
| 1 | Human Resources Services Director | Oversee and manage the HR Services organization | 1 | GS15 | Q4FY05 | No | NASA |
| 2 | Secretary | Administrative and clerical duties | 1 | GS8 | Q4FY05 | No | NASA |
| 3 | Customer Service Reps | Administrative Specialist providing broad operational support between Centers and NSSC | 5 | GS11-12 | Q1FY06 | No | NASA |
| 4 | Lead HR Specialist | Lead for HR Operations and HRIS functions | 1 | GS13 | Q1FY06 | No | NASA |
| 5 | HR Specialist | Generalists providing operations functions | 2 | GS11-12 | Q1FY06 (1)<br>Q3FY06 (1) | No | NASA |
| 6 | HR Specialist (IT) | Provides HRIS functions | 5 | GS11-12 | Q1FY06 (2)<br>Q4FY06 (1)<br>Q2FY07 (2) | No | NASA |
| 7 | Lead HR Specialist | Lead for Programs/Services & Training functions | 1 | GS13 | Q1FY06 | No | NASA |
| 8 | HR Specialist (HR Development) | Provides training functions | 3 | GS11-12 | Q1FY06 (2)<br>Q4FY07 (1) | No | NASA |
| 9 | HR Specialist (Employee Benefits) | Provides benefits and other Programs/Services functions | 1 | GS11-12 | Q2FY06 | No | NASA |
| 10 | HR Specialist | Provides Programs/Services functions | 1 | GS11-12 | Q2FY06 | No | NASA |
| | | TOTAL CIVIL SERICE PERSONNEL: | 21 | | | | |

## Table A-18: Human Resources Contractor Staffing Plan

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Equivalent Civil Service Grade Range | Project Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe | Recommendations on Recruiting Sources |
|---|---|---|---|---|---|---|---|
| 1 | HR Services Contract Supervisor | Oversee and manage the HR Services organization | 1 | GS15 | Q4FY05 | No | NASA |
| 2 | Assistant HR Services Supervisor | Assists in management of HR services org and reporting | 1 | GS14 | Q1FY06 | No | NASA |
| 3 | Secretary | Administrative and clerical duties for contractors | 1 | GS 7-8 | Q4FY05 | No | NASA |
| 4 | Supervisory HR Specialist | Supervises HR Operations and HRIS functions | 1 | GS13 | Q1FY06 | No | NASA |
| 5 | Supervisory HR Specialist | Supervises Programs/Services & Training functions | 1 | GS13 | Q1FY06 | No | NASA |
| 6 | Secretary | Clerical support for 2 sub-orgs | 2 | GS 6-7 | Q1FY06 | No | NASA |
| 7 | HR Specialist | Generalists providing operations functions | 16 | GS-9/11/12 | Q1FY06 (6)<br>Q3FY06 (7)<br>Q3FY07 (3) | No | NASA |
| 8 | HR Assistant | Support for operations functions | 10 | GS-5/6/7 | Q1FY06 (2)<br>Q3FY06 (3)<br>Q3FY07 (5) | No | NASA |
| 9 | HR Specialist (IT) | Provides HRIS functions | 18 | GS-9/11/12 | Q1FY06 (3)<br>Q4FY06 (5)<br>Q2FY07 (5)<br>Q3FY07 (5) | No | NASA |
| 10 | HR Specialist (HR Development) | Provides training functions | 20 | GS-9/11/12 | Q1FY06 (8)<br>Q4FY07 (12) | No | NASA |
| 11 | HR Assistant | Support for training functions | 10 | GS-6/7 | Q1FY06 (4)<br>Q4FY07 (6) | No | NASA |
| 12 | HR Specialist (Employee Benefits) | Provides benefits and other Programs/Services functions | 5 | GS-9/11/12 | Q2FY08 | No | NASA |
| 13 | HR Specialist | Provides Programs/Services functions | 6 | GS-9/11/12 | Q2FY06 (4)<br>Q4FY06 (2) | No | NASA |
| 14 | HR Assistant | Support for Programs/Services functions | 2 | GS-8/9 | Q2FY06 | No | NASA |
| | | **TOTAL CONTRACTOR ESTIMATE:** | **94** | | | | |

## Table A-19: Procurement Civil Service Staffing Plan

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Civil Service Grade Range* | Projected Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe | Recommendations on Recruiting Sources |
|---|---|---|---|---|---|---|---|
| 1 | Director, Office of Procurement | Oversee and manage the NSSC Procurement Organization | 1 | SES | **Q3FY05** | None | All Centers |
| 2 | Secretary | Secretarial, Administrative duties | 1 | GS8 | **Q3FY05** | None | All Centers |
| 3 | Head, E-Procurement Systems | Oversee Contractor Support to E-Procurement Systems | 1 | GS15 | **Q3FY05** | None | All Centers |
| 4 | Procurement Analysts/Computer specialists | Work the various e-procurement tool development and deployment; tool requirements definition, IFM Procurement Management coordination. Systems support of the many and varied procurement electronic systems. | 4.9 | GS14 | **Q3FY05** (2.5) **Q1FY06** (2.4) | None. Strong Procurement knowledge and background required. | MSFC, GRC and other centers |
| 5 | Procurement Analysts | Work Policy and various system content management issues | 4.1 | GS13 | **Q3FY05** (1.1) **Q1FY06** (3) | None | GRC and other centers |
| 6 | Procurement Analysts | NAIS team activities, etc. | 2 | GS12 | **Q3FY05** | None | All centers |
| 7 | Procurement Analyst | Leadership and advocacy of CCI program | 1.2 | GS14 | **Q2FY05** | | All centers |
| 8 | Contract Specialist | Award and Administer Agency Contracts | 8 | GS7-13 | **Q4FY06** (2:13, 1.5:12) **Q1FY07** (2.6:11, 1.7:12, .2,7) | None | All Centers (esp. those doing the CCI contracts to be transferred.) Also include new Procurement interns for entry level grades |
| 9 | Head, Agency Contracting Activities | Lead and manage the Major Agency Contracts and Consolidated Contracting Initiative Advocacy Program | 1 | GS15 | **Q3FY05** | None | All Centers |
| 10 | Procurement Analyst | Mgmt of Agency bankcard program, and self assessment program. | 1.1 | GS14 | **Q1FY06** | None | All centers |
| 11 | Procurement Analyst | Perform audit related activities and other mgmt operations coordination. | 2.8 | GS9 -13 | **Q1FY08** (1:9, 1.8:12) | None | All centers |
| 12 | Head, Grant/SBIR Services | Lead and Manage the award/administration of Agency Grants, CA's and SBIR/STTRs. | 1 | GS14 | **Q3FY05** | None | All Centers |
| 13 | Procurement Analysts | Grant/SBIR Lead, and SBRA Liaison. Policy Issues | 2 | GS14 | **Q3FY05** | None | |
| 14 | Contract Specialists | Award/Administer of Grants, CA's and SBIR/STTR | 4 | GS13 | **Q3FY06** (2) **Q4FY06** (2) | None | GSFC,and other centers |
| 15 | Customer Service Reps | Liaison activities between Centers and NSSC. | 5 | GS12/13 | **Q3FY05** (3:13, 2:12) | None | All Centers |
| | | **TOTAL CIVIL SERICE PERSONNEL:** | **40.1** | | | | |

## Table A-20: Procurement Contractor Staffing Plan

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Equivalent Civil Service Grade Range | Projected Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe |
|---|---|---|---|---|---|---|
| 1 | Project Manager | Manage and Oversee NSSC OP Contractor Operations | 1 | GS14 | Q3FY05 | None |
| 2 | Secretary | Admin and clerical | 2 | GS-7 | Q3FY05 | None |
| 3 | Head, Procurement Systems | Lead NSSC OP Contractor IT Systems | 1 | GS13 | Q3FY05 | None |
| 4 | Computer Programmers | Develop, and maintain procurement systems | 13.9 | GS11-13 | Q3FY05 (3:13,2:12,2:1) Q1FY06 (1:13, 2:12, 1:11) Q2FY06 (1:12,1.9:11) | MSFC, GRC and other centers |
| 5 | Technical specialists | Help desk staff for NAIS Applications | 2 | GS11 | Q1FY06 | None |
| 6 | Procurement Data Technician | Perform contract award data entry, etc. | 0.5 | GS7 | Q4FY06 | See item 11 |
| 7 | Procurement Training Coordinators | Coordinate the1102 training and intern programs, etc. | 1.5 | GS11 | Q1FY06 | None |
| 8 | Head | Oversee the Grants operation | 1 | 13 | Q3FY06 | None |
| 9 | Head | Oversee the SBIR & Data, closeout operations | 1 | 13 | Q3FY06 | None |
| 10 | Grant and SBIR Technicians | Prepare pre-award file documentation for Grants, CA's and SBIRs | 37.5 | GS 5-12 | Q3FY06 (2:12,.5,9) Q4FY06 (2.5:9), Q1FY07 (2:11,3:7, 2.4:5) Q2FY07 (2:9, .8:7) Q3FY07 (2:11,2:9, 3:7, 2.3:5) Q1FY08 (1:5, 5.2:7, .5:9) Q2FY08 | None |
| 11 | Procurement Data Technicians | Perform contract award data entry, etc. | 1.5 | GS 7-9 | Q3FY06 (.5:7, 1:9) | See item 6 |
| 12 | Closeout technicians | Prepare closeout documentation | 28 | GS 9-11 | Q1FY06 (25:7, 3:11) | None |
| | | TOTAL CONTRACTOR ESTIMATE: | 90.9 | | | |

## Table A-21: Financial Management Civil Service Staffing Plan

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Civil Service Grade Range* | Projected Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe | Recommendations on Recruiting Sources |
|---|---|---|---|---|---|---|---|
| 1 | Financial Services Director | Oversee and manage the NSSC/Finance organization | 1 | SES | Q4FY05 | No | NASA/External |
| 2 | Director's Secretary | Secretarial, Administrative duties | 1 | GS 8-9 | Q4FY05 | No | NASA |
| 3 | Associate Director, Financial Operations | Management of Accounts Payable, Receivable, Payments Certification, Collections, Reimbursable receivables | 1 | GS-15 | Q1FY06 | No | NASA |
| 4 | Accounts Payable Lead | Provide guidance to Certifying Officers, interface with contract payables management personnel | 1 | GS-13 | Q3FY06 | No | NASA |
| 5 | Certifying Officers | Certification of all payments | 10 | GS-12 | Q3FY06 | No | NASA |
| 6 | Accounts Receivable Lead | Oversight of Accounts Receivable processing and interface with A/R contract management personnel | 1 | GS-13 | Q3FY06 | No | NASA |
| 7 | Collections Agent | Receive Cash, Checks sent to NSSC | 1 | GS-11 | Q3FY06 | No | NASA |
| 8 | Associate Director for Payroll & Labor Services | Management of Agency payroll and labor processing and guidance and communication with DOI for ePayroll | 1 | GS-15 | Q1FY06 | No | NASA |
| 9 | Virtual Payroll Office | Liason interface between NASA Center's and the DOI. | 4 | GS-10-11 | Q2FY06 | No | Virtual; currently at MSFC; e-Gov payroll will impact; personnel already on board |
| 10 | T& A Processing | System administrators for the agency T&A system. Ensure receipt of all employees time. | 3 | GS-10-11 | Q2FY06 | No | Virtual; currently at MSFC; e-Gov payroll will impact; personnel already on board |
| 11 | Labor Processing | Validate labor cost data from DOI. Release to SAP. | 5 | GS-10-11 | Q2FY06 | No | Virtual; currently at MSFC; e-Gov payroll will impact; personnel already on board |
| 12 | Associate Director of Financial Accounting Services | Management of Quality Control, Financial Reporting Functions (General Ledger, SF 224, NF 1018's) | 1 | GS-15 | Q1FY06 | No | NASA |
| 13 | Quality Control Specialist | Conduct reviews of performance, metrics, and internal reviews | 3 | GS-11/12 | Q2FY06 | No | NASA |
| 14 | SF-224 Accountant | Process Agency's Statement of Transactions to U.S. Treasury | 1 | GS-11/12 | Q4FY06 | No | NASA |
| 15 | NF-1018 Accountant | Process/record NF 1018 property data in financial system, conduct training | 3 | GS-11/12 | Q2FY06 | No | NASA |
| 16 | GL Accountant | Review, Record US Standard General Ledger Accounts | 1 | GS-11/12 | Q4FY06 | No | NASA |
| 17 | Associate Director of Travel Services | Management and oversight of Agency Domestic, Foreign, International, PCS travel processing | 1 | GS-15 | Q1FY06 | No | NASA |
| 18 | Travel Voucher Processors/Reviews | Process travel vouchers and change of station vouchers, advances, taxes, travel card issues | 9 | GS-9 | Q2FY06 | No | NASA |
| 19 | Associate Director of Agency Services | Management and oversight of NSSC/Finance Customer (Transformation) Services, Agreements, and Audit Liaison, | 1 | GS-15 | Q1FY06 | No | NASA |
| 20 | Secretary | Secretary to Associate Director of Agency Services, administrative duties | 1 | GS-7 | Q1FY06 | No | NASA |
| 21 | Audit Liaison (Auditor) | NSSC/Finance liaison with external auditors (NASA IG, GAO, etc) and internal review personnel | 1 | GS-12 | Q2FY06 | No | NASA |
| 22 | Center Customer Service personnel | On-site at Centers; perform customer service duties between personnel at Centers and NSSC/Finance | 5 | GS-11 | Q2FY06 | No | NASA |
| 23 | Budget/Price Analyst | Develop budget requirements, planning, cost effectiveness studies, alternatives, options for pricing the NSSC/Finance organization | 2 | GS-11/12 | Q1FY06 | No | NASA |
| | | **TOTAL CIVIL SERICE PERSONNEL:** | **58** | | | | |

## Table A-22: Financial Management Contractor Staffing Plan

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Equivalent Civil Service Grade Range | Projected Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe |
|---|---|---|---|---|---|---|
| 1 | Business Analyst | Support to the Financial Services Director; prepare studies, reports, analysis, administrative support | 1 | GS-15 | Q4FY05 | No |
| 2 | Financial Operations Services Division Contractor Supervisor | Supervisor for all contractors working under the Financial Operations Services Division (Accounts Payable & Accounts Receivable) | 1 | GS-13 | Q1FY06 | No |
| 3 | Secretary | To provide secretarial support to the Contract Lead for Financial Operations Services | 1 | GS-7 | Q1FY06 | No |
| 4 | Accounts Payable Technicians | Process agency payments | 52 | GS-9 | Q3FY06 | No |
| 5 | Accounts Receivable Technicians | Process agency receivables and reimbursable receivables | 10 | GS-9 | Q3FY 06 | No |
| 6 | Payroll Contractor Lead | To manage contractors within the payroll/labor processing organization | 1 | GS-13 | Q1FY06 | No |
| 7 | Secretary | To provide secretarial support to Contractor Lead | 1 | GS-7 | Q1FY06 | No |
| 8 | Payroll Technicians | Process agency Payroll transactions and reports | 5 | GS-13 | Q2FY06 | No |
| 9 | T&A Processing | Ensure receipt of all employees time for the 10 centers, follow up on outstanding T&A's. | 6 | GS-13 | Q2FY06 | No |
| 10 | Secretary | To provide secretarial support to the Contract Lead for Financial Accounting Services | 1 | GS-7 | Q1FY06 | No |
| 11 | Financial Accounting Services Division Contractor Lead | Lead for contractors for NF-1018 processing, analysis, and tracking | 1 | GS-13 | Q1FY06 | No |
| 12 | Accountant | NF-1018 (Contractor Held Property) processing, follow-up, analysis | 2 | GS-11 | Q2FY06 | No |
| 13 | Secretary | Secretarial support to the contract lead for Travel Services | 1 | GS-7 | Q1FY06 | No |
| 14 | Financial Analyst | Travel Services Division contractor supervisor for contractors in the Division; knowledge of domestic, international, change of station federal travel processing | 1 | GS-13 | Q1FY06 | No |
| 15 | Travel Processing | Process domestic, international, change of station travel vouchers, advances. | 12 | GS-9 | Q2FY06 | No |
| 16 | Customer Service Representatives | Knowledge of NSSC/Finance customer service requirements | 10 | GS-11 | Q2FY06 | No |
| | | **TOTAL CONTRACTOR ESTIMATE:** | **106** | | | |

## Table A-23: Information Technology Civil Service Staffing Plan

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Civil Service Grade Range* | Projected Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe | Recommendations on Recruiting Sources |
|---|---|---|---|---|---|---|---|
| 1 | GS-801, Supv AST, Auto Processing | IT Manager for NSSC | 1 | SES | When other mgrs are hired (Q1FY05) | | |
| 2 | GS-801, Supv AST, Auto Processing | NSSC IT Supervisor | 1 | GS-15 | Q2FY05 | | |
| 3 | GS-344, Managament Analsyt | Clerical | 2 | GS-7 | Q1FY05(1) Q4FY05 (1) | | |
| 4 | Customer Service Reps | Provide customer service support | 5 | GS13 | Q3FY05 | | |
| 5 | GS-801, Supv AST, Auto Processing | ODIN Program COTR | 1 | GS-15 | Q4FY05 | | |
| 6 | GS-1102, Contract Specialist | ODIN Program CO | 1 | GS13 | Q4FY05 | | |
| 7 | GS-2210, IT Specialist (Plcy Pln) | NCCS Interface/Alt. ODIN COTR | 1 | GS-13 | Q4FY05 | | |
| 8 | GS-1102, Contract Specialist | Contract Specialist | 1 | GS-13 | Q4FY05 | | |
| 9 | GS-343, Program Analyst | Resource Analyst | 1 | GS-12 | Q4FY05 | | |
| 10 | GS-801, Computer Engineer | IT Functional Leads | 3 | GS-14 | Q2FY05 (1) Q3FY05 (2) | | |
| 11 | GS-801, Computer Engineer | IT Sr. Eng./Developers | 6 | GS-13 | Q2FY05 (3) Q3FY05 (3) | | |
| 12 | GS-801, Computer Engineer | Sys Admin/Data mgmt | 3 | GS-12 | Q2FY05 (2) Q3FY05 (1) | | |
| | | **TOTAL CIVIL SERICE PERSONNEL:** | **26** | | | | |

**Table A-24: Information Technology Contractor Staffing Plan**

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Equivalent Civil Service Grade Range | Projected Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe |
|---|---|---|---|---|---|---|
| **1** | IT Contractor | Web Developers | 5 | GS12 | Q3FY05 | |
| **2** | IT Contractor | Sr. Computer Engineers | 6 | GS13 | Q3FY05 | |
| **3** | IT Contractor | Lead Computer Engineers | 4 | GS14 | Q3FY05 | |
| **4** | IT Contractor | 1-Supervisor; 3 Technical Experts | 4 | GS15 | Q3FY05 | |
| **5** | IT Contractor | Managers | 1 | SES | Q3FY05 | |
| | | **TOTAL CONTRACTOR ESTIMATE:** | **20** | | | |

**Table A-25: Office of the Executive Director Civil Service Staffing Plan**

| Number | Job Title | Brief Description of Work/Competencies | # of Positions Required | Civil Service Grade Range* | Projected Need Dates at NSSC | Potential for Consolidation w/ other NSSC Work? Describe | Recommendations on Recruiting Sources |
|---|---|---|---|---|---|---|---|
| **1** | Executive Director | Chief Executive Officer | 1 | SES | Q1FY04 | No | NASA/External |
| **2** | Deputy Director | Chief Operating Officer | 1 | SES | Q2FY04 | No | NASA |
| **3** | Executive Secretary | Secretarial, Administrative duties | 1 | GS 8-9 | Q2FY04 | No | NASA |
| **4** | Executive Officer | Support to Director's Office | 1 | GS-14/15 | Q1FY05 | No | NASA |
| **5** | Chief Council | Legal Council | 1 | GS-15 | Q3FY05 | Yes | NASA - Utilize Field Center Support |
| **6** | EO Officer | Equal Opportunity/Diversity Management | 1 | GS-14/15 | Q3FY05 | Yes | NASA - Utilize Field Center Support |
| **7** | Environment, Energy, and Emplolyee Health and Safety Officer | similar to Environmental Managers at Centers to ensure quality workplace | 1 | GS15 | Q3FY05 | No | NASA |
| **8** | Business Manager | Oversight of NSSC Internal Business Operations (PCO, PO, CO, IE) | 1 | GS-15 | Q4FY04 | No | NASA |
| **9** | Secretary | Secretarial, Administrative duties | 1 | GS-7/8 | Q1FY05 | No | NASA |
| **10** | Program Analyst Officer | NSSC Program Analyst | 1 | GS-14 | Q1FY05 | No | NASA |
| **11** | Administrative/ Personnel Officer | Administrative Responsibilities | 1 | GS-14 | Q1FY05 | No | NASA |
| **12** | Contracting Officer | Contract Management Responsibilities | 1 | GS-14 | Q3FY05 | No | NASA |
| **13** | Industrial Engineer | Process Transformation/Re-engineering & Facility Management | 1 | GS-14/15 | Q1FY05 | No | NASA |
| **14** | Customer Service Mgr | Customer Relations & oversight of Field Center Customer Service Reps | 1 | GS-13/14 | Q1FY05 | No | NASA |
| | | **TOTAL CIVIL SERICE PERSONNEL:** | **14** | | | | |

## A.3.1.2 NSSC Training Plan

**Required Orientation Training Checklist Guidelines:**

Any individual employed by NASA and the Federal Government has been screened to assure they meet the qualifications required to perform in the position for which they are hired. The required training is defined as the ***minimum*** training a qualified individual would need after they have been assigned to a position to orient the employee to the job and the work environment. This requirement would only be imposed for employees when they are initially assigned to a permanent position. The Required Orientation Training Checklist for an employee on a developmental assignment or detail would be maintained by the supervisor in the home organization.

1. *Basic Information Technology (IT) Security Awareness and Training* – The supervisor ensures new employees and new managers/supervisors complete applicable IT Security Awareness and Training.

2. *Business World* – The supervisor ensures the employee can locate Business World on the NSSC website and understands the NSSC Business System.
3. *Business System Manual (BSM)* – The supervisor ensures the employee can locate and understands the BSM, and understands the most current version would be available electronically at this website.
4. *Organizational Business Objectives and Agreements (BOA)* – The supervisor ensures the employee has read and understands his/her organization's BOA and how he/she strategically links to the organization.
5. *Performance Plan (Accomplishments)* – The supervisor ensures the employee can access his/her Performance Plan and understands the method by which his/her performance would be evaluated.
6. *Competency Management System (Profile)* – The supervisor ensures the employee can access the Competency Management System and understands how to populate his/her Profile.
7. *Voluntary Protection Program (VPP) Core Safety and Health Training* – The supervisor ensures the employee has read and understands the NSSC Safety and Health Overview, which outlines the NSSC and Agency Safety and Health policies and employee responsibilities.
8. *Orientation to work site* – The supervisor ensures the employee is familiar with his/her work site.
9. *Safety Orientation* – The supervisor familiarizes the employee with potential hazards in the specific work environment.
10. *Orientation to assigned work* – The supervisor ensures the employee has been oriented to their assigned work through OJT and/or shadowing.
11. *Scheduled Area Access (if needed)* - The supervisor identifies the required Area Access training for the employee and ensures the courses are scheduled. The supervisor further ensures the employee can access the Area Access training website. Only the initial Area Access training required for an employee to begin work should be documented on the template.
12. *Relevant Documented Procedures*- The supervisor identifies the relevant documented procedures for a newly assigned employee that apply to the employee's assigned work, if there are any, and ensures the employee has read and understands the contents. If the supervisor determines there are no applicable procedures, the supervisor should enter "N/A" on the template.
13. *Relevant technical, program, or project policies/guidelines* –The supervisor identifies policies that apply to the employee's assigned work, if there are any, and ensures the employee has read and understands the contents. If the supervisor determines there are no applicable policies/guidelines, the supervisor should enter "N/A" in the list.

    **Notes:**

    1. At a minimum, it is recommended the supervisor identify **at least** one document in #12 and/or #13.
    2. Any additional work assigned to an employee in an established position that requires knowledge of additional documents/procedures/ policies/guidelines would be considered developmental training and should not be added to an existing Required Orientation Training Checklist.

If the supervisor determines there are additional orientation requirements not listed in the Required Orientation Training Checklist of an employee first entering a new position, he/she would list these requirements on the form.

Once the Required Orientation Training Checklist is complete, the supervisor would sign and date that all of the requirements have been met. The supervisor would not need to document the date each element of the Required Orientation Training Checklist was completed, just that the orientation/training has been completed.

The Required Orientation Training Checklist would be completed for an employee in a specific position once and only once, when the employee first enters the new position. Any additional training given to an employee would be considered developmental. Examples of additional developmental training include Headquarters-sponsored training, university course work, new revisions to pertinent documents/procedures/policies/guidelines, knowledge of new processes due to new tasks assigned, and new Center or Agency initiatives (such as IFMP) for which training is offered.

Since the Required Orientation Training Checklist would be completed for an employee in a specific position once and only once, training records would not be updated if a new revision of the template is released.

## A.3.2 Business Operations Strategy

This BOS Appendix features more detailed information on the following items: 1) Development of High Level Process Maps for each Functional Activity, 2) SIPOC Related NSSC Activities, 3) Performance Metrics and 4) Template for a Service Level Agreement

### A.3.2.1 Development of Process Maps for each Functional Activity

#### A.3.2.1.1 Processing Mapping Approach

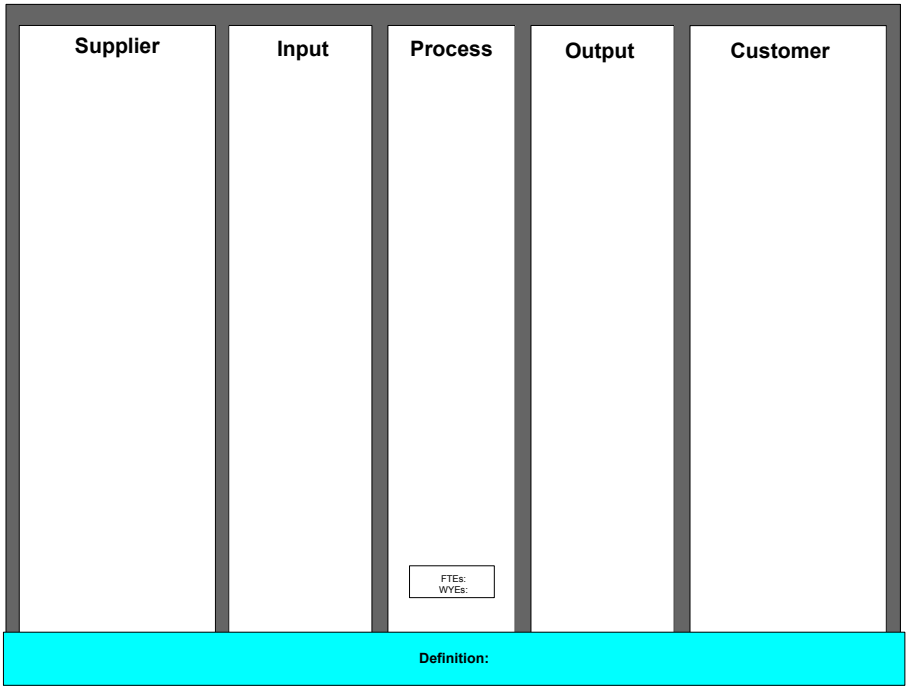
To assess functional phasing by determining interrelationships between other processes the functional Subteams with activities transitioning to the NSSC were engaged to develop Supplier, Input, Process, Output, Customer (SIPOC) diagrams for each activity that would move to the NSSC. The purpose of the SIPOC diagrams was to assess functional phasing and to identify potential risks, to provide valuable information on the interdependencies and interfaces of the activities, to identify those parties involved along with their capacity, and to validate and strengthen initial conclusions on activities from an FTE/WYE perspective. The SIPOCs also provide a means to standardize data collection across the functional teams and provide the NSSC director detailed summaries of all activities transitioning. Once drafted, the SIPOCs would flow into the SEB team activities and can be further decomposed into functional deployment maps to show step-by-step hand-offs within each activity.

SIPOC diagrams are a tool to document process flows and interrelationships between activities. Unlike more detailed functional deployment process maps, SIPOCs do not focus on "how the process is completed" rather, they focus on the complex interrelationships between activities,

from the perspective of Suppliers feeding Inputs or data into the process, and when the process has completed its activity the Output that gets fed to a Customer. This process would allow for a one-page summary diagram that uses a variety of different symbols to depict the necessary information. For the sake of this analysis, activities are termed as processes. Using this approach, the NSSC teams were able to develop detailed diagrams for each functional activity that were consistent in form and format across each functional area.

A SIPOC diagram uses a standardized template. An example of the template may be seen below:

**Figure A-1: Standardized SIPOC Diagram Template**



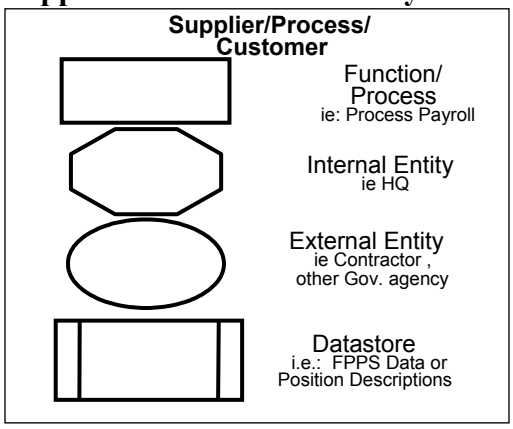

At the center of the SIPOC is the Process - this shows which activity is being depicted. The title of the activity is created to not be overly broad, and to accurately relate to the activity. Along with the title the definition describes the activity that is taking place, scopes the boundaries of the activity and allows a relatively un-educated reader the ability to understand what is taking place within the activity. An example of a definition for the HR activity: Production of Informational Materials is to:

*"Develop materials (i.e. desk guides, brochures, recruitment tools, training manuals) to support various HR subject matter areas and initiatives including the design, content development, printing and distribution (i.e. web posting) based on the initiator's requirements. Target audiences for materials include NASA employees, HR staff and the public."*

A SIPOC uses a variety of different symbols to depict a host of different meanings specific to NASA requirements. Once understanding of the symbols is gained, it is very easy to understand all SIPOC diagrams. The elements of the SIPOCs that use different symbols include:

- Supplier/Process/Customer
- Function/Process (Phasing)
- Function/Process (Owner)
- Input/Output (Data)
- Input/Output (IFMP)

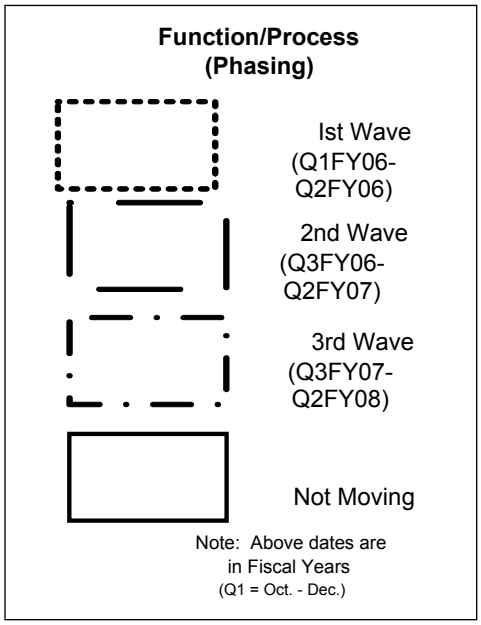
**Supplier/Process/Customer Symbols:**




Activities or Processes are depicted as rectangles. The rectangles are assigned only to activities transitioning to the NSSC. Internal entities are internal to NASA and under NASA control; this includes other functional areas or other parts of the NASA organization such as specific user communities. Internal entities are depicted though octagons. Circles identify entities that are external to NASA; these include Other Government Entities, external users, universities etc. The final shape that is utilized in the Supplier, Process, or Customer column is the data store symbol. These are electronic in nature and could be a data warehouse or something similar.

**Function/Process Phasing:**

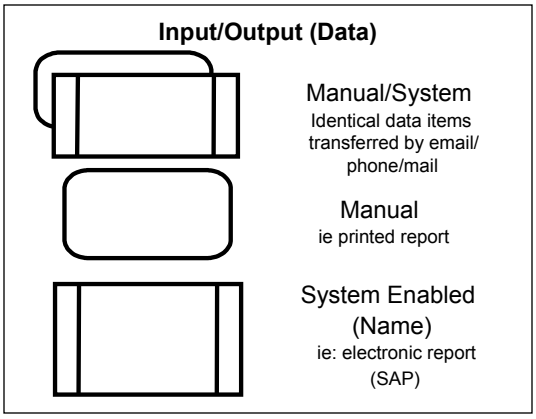
A critical component of the SIPOCs is to document the phasing of the activities relative to other activities. The assumption being that activities transitioning in the same wave are potential more prone to conflict that activities interfacing with static activities. The line type around the activity rectangle identifies the phasing wave. For example a rectangle with a dotted line identifies that the activity is transitioning in the 1st Wave, or between FYQ3 & Q4 2005 (April thru September 2005)

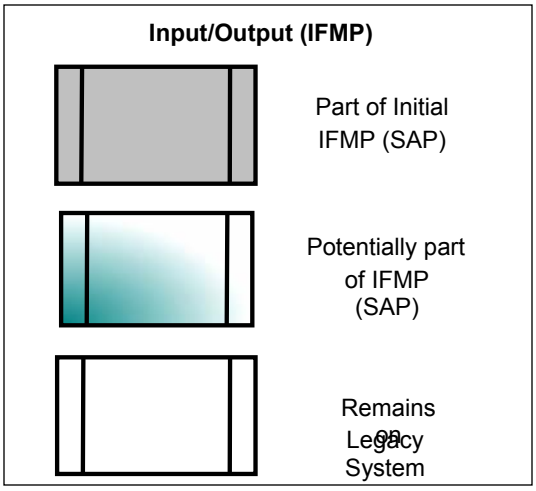



**Function/Process Owner:**


To easily distinguish the different functional areas proposed for transition to the NSSC, different colors were used. The color of any internal NASA shape identifies the relevant functional area. For example a yellow rectangle with the title payroll identifies the activity payroll to be part of the financial management activities transitioning to the NSSC. The following colors were used for the NSSC functional areas:

**Input/Output Data & System**




Within the two columns Input and Output data items are linked to Suppliers and Customers respectively. Within these columns the data items are identified and the means by which they enter or exit the activity are shown. Data items are depicted as being either manual, system enabled or a combination of the two. Typically manual inputs and outputs are more time consuming and prone to error than an automated input or output. The combined symbol shows that the same data item is being utilized through both manual and automated means.

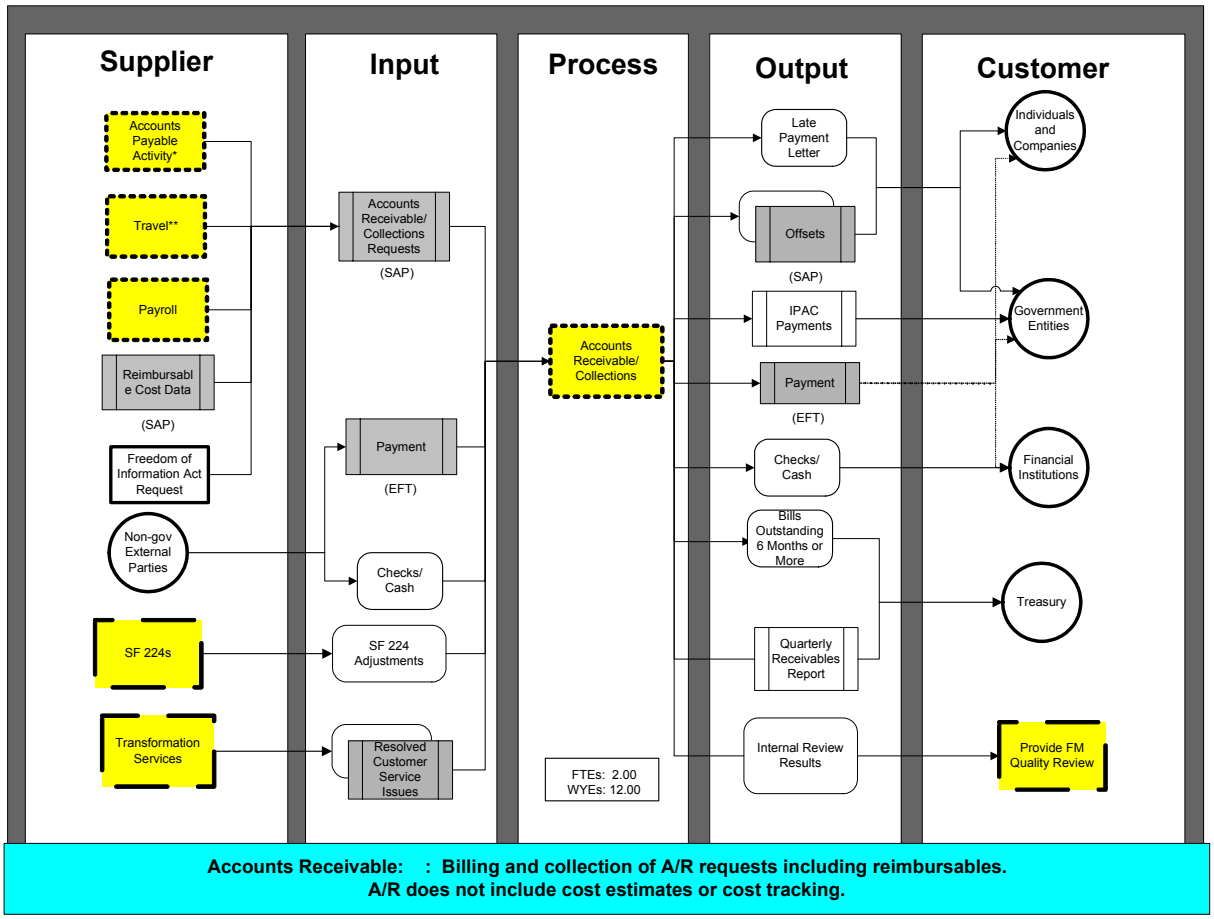
Activities with a large number of manual inputs or outputs maybe good candidates for automation in the future which could lead to greater process efficiencies.

Additionally, whenever a system enabled symbol is used, the system is named, and its relationship with IFMP is noted. The IFMP schedule is another potential source of risk, and is therefore monitored within the SIPOC format.

Lines are used to connect Suppliers and Customers to Inputs and Outputs. The line types may vary to make it easier to follow the line; different line types have no implied meaning. The Supplier side and Customer side of an activity are independent. The number of inputs in no way reflects the number of outputs. For an activity to operate effectively it may be necessary to receive a large number of inputs from a diverse group of Suppliers. The Output of the activity could simply be one report being Output to a single Customer – for example, in the case of the budget, many inputs are received, yet the only output is a completed budget document.

A completed SIPOC diagram can be seen in the following figure:

**Figure A-2: FM SIPOC for "Accounts Receivable/ Collections"**




### A.3.2.1.2 Process Mapping Process

To complete SIPOC diagrams for each activity that would transition to the NSSC, work was completed at the functional sub-team level with the assistance of functional subject matter experts as appropriate. Each functional area utilized the following process to ensure consistent output:

- Build off data that has already been collected when determining which functions would transfer to NSSC
- Collect additional data to fill any gaps - related to Suppliers, Inputs, Process, Output, Customer
- Utilize data collection templates to normalize data
- Build SIPOC diagrams from data in the collection templates that characterized how the sub-teams want the activity to look like at the NSSC
- Circulate and verify information is correct and accurately displayed with functional SMEs and sub-team members
- Revise diagrams as necessary

- Review diagrams globally across functions to ensure consistency (i.e. if HR identified a Procurement process as an input, ensure an appropriate entry is on a Procurement diagram)

Work was completed between March and May, with each sub-team and their associated Subject Matter Experts participating in face-to-face working sessions, teleconferences and numerous review sessions.

**A.3.2.1.3 Process Mapping Output**
Completed versions of the HR, Procurement and Financial Management SIPOCs can be found in the Addendum to this final report entitled "NASA Shared Services Center (NSSC): SIPOC Diagram Summary Report"

**A.3.2.1.4 Process Mapping Conclusions**
All sub-teams made some changes to activities through the SIPOC process. Changes ranged from alterations to titles and clarifications of definitions to grouping of activities in different ways. Many of the activities that were examined by the different sub-teams rely upon systems to function. Changes in the NASA IFMP implementation would have an affect on how the To-Be state was envisioned. Therefore, the SIPOCs provide a point in time depiction, and should be reevaluated as major technology changes and other initiatives such as e-payroll occur.

**A.3.2.2 SIPOC Related NSSC Activities**
The SIPOC Process enabled team members to fully comprehend the scope of the activities they nominated for migration to the NSSC, and view the activities from the perspective of how they interact with their environment. The completed SIPOCs are an intuitive way to share information about functional activities across functions in a standard and comprehensive manner. The NSSC Executive Director would be able to leverage the knowledge gathered throughout the SIPOCs to assist in the crucial decision making process as the NSSC evolves from a concept into a reality.

The comprehensive SIPOCs also provided the foundation for follow-on activities concerning relationships between and among the various functional areas. Each of the functional subteams from HR, FM, and Procurement utilized the SIPOC diagrams to further assess complexity issues and potential risks associated with the activities designated to migrate to the NSSC. The functional subteams created Relationship Matrices (derived from the SIPOC activities) which provided the foundation for the development of the Relationship Diagrams. These Relationship Diagrams enabled the team members to better understand the process and information flows throughout the various functional activities. From these diagrams, the subteams were then able to relatively measure each individual activity in terms of complexity. Only activities with Inputs/Outputs to other activities or functions that would move to the NSSC were included in this analysis.

**Inter and Intra Relationship Diagrams**

### A.3.2.2.1 Relationship Diagram Process

Each of the functional subteams reviewed their respective collection of completed SIPOCs. From these SIPOCs, each team developed an Inter and Intra Relationship Matrix. These matrices focused on the 'subject' activity of each SIPOC and recorded the inputs received or the outputs handed off for each activity. The following table features the template utilized for the Inter and Intra Relationship Matrix by each of the functional subteams.

**Table A-26: Inter and Intra Relationship Matrix Template**

| | Function | Name of Functional Activity Giving Output or Receiving Input | Phasing Wave | Input or Output? | Input or Output Provided | Supplier (Input) or Customer (Output) | Functional Activity Receiving Output or Providing Input | Function | Phasing Wave |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |

| |
|---|
| Human Resources |
| Financial Management |
| Procurement |
| Facilities |
| Other |

Once populated, the Relationship Matrices were used to develop the Intra and Inter Relationship Diagrams for each of the functional areas. The Relationship Diagrams facilitate the observation of relationships between functional activities. These relationships may be viewed within a single function (intra relationship), or between multiple functional areas (inter relationship). These Diagrams show how inputs and outputs flow from one activity to another. The flows of inputs and outputs help display the interdependencies among and between functional activities. These interdependencies help determine which activities may experience more potential obstacles as they prepare for transition to the NSSC.

### A.3.2.2.2 Relationship Diagram Output

The Relationship Diagrams are segmented into three sections, each representing one of the three phasing waves for the functional activities' transition to the NSSC (Phase I: FY2006, Phase II: FY2007, and Phase III: FY2008). The functional activities are represented by their 'process' box with the appropriate functional color along with the correlating phasing outlines as prescribed in the SIPOC Diagrams. Each functional activity is place within its' proper phasing wave and is then linked to the functional activity for which it provides output or from which it receives input.

Note that in the diagrams, outputs provided are written in black, whereas the inputs received are written in red. Also note that interconnecting lines throughout the Diagrams may have different patterns from one another. This convention is used only to make it easier to distinguish groupings from one another. The different line patterns do not indicate any characteristics or important features.

The Intra Relationship Diagrams may be found below for Human Resources, Financial Management, and Procurement as well as the overall Inter Relationship Diagram:

**Figure A-3: Human Resources Intra Relationship Diagram**

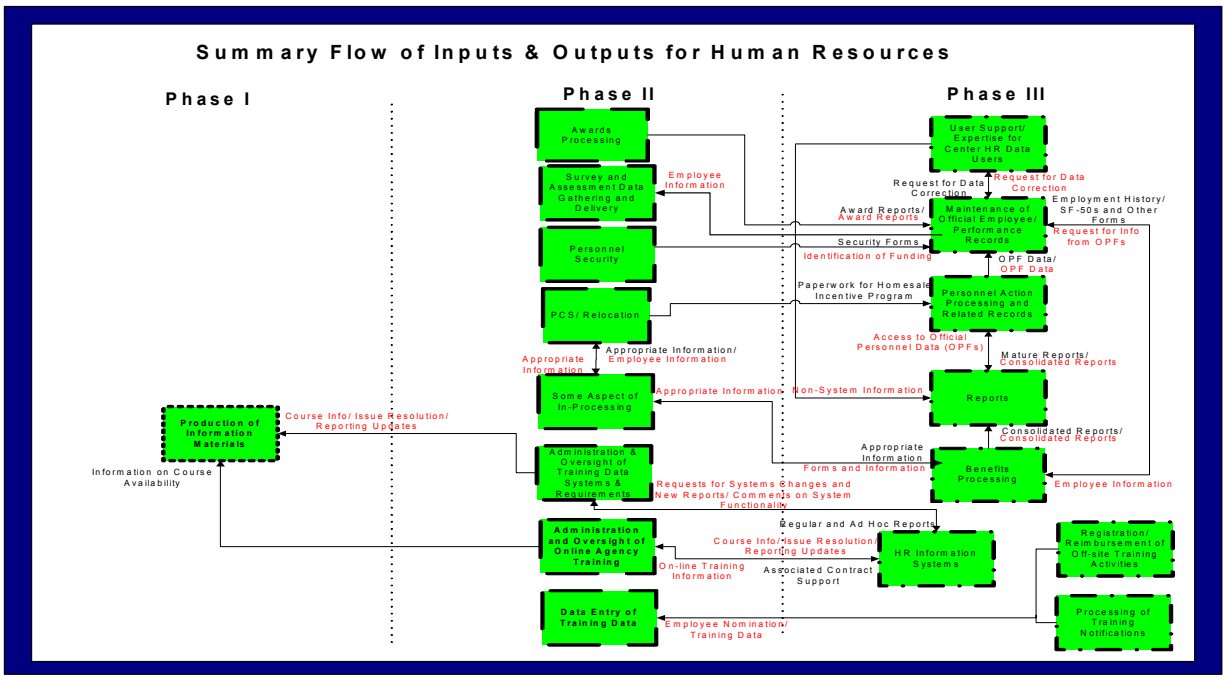



**Figure A-4: Procurement Intra Relationship Diagram**

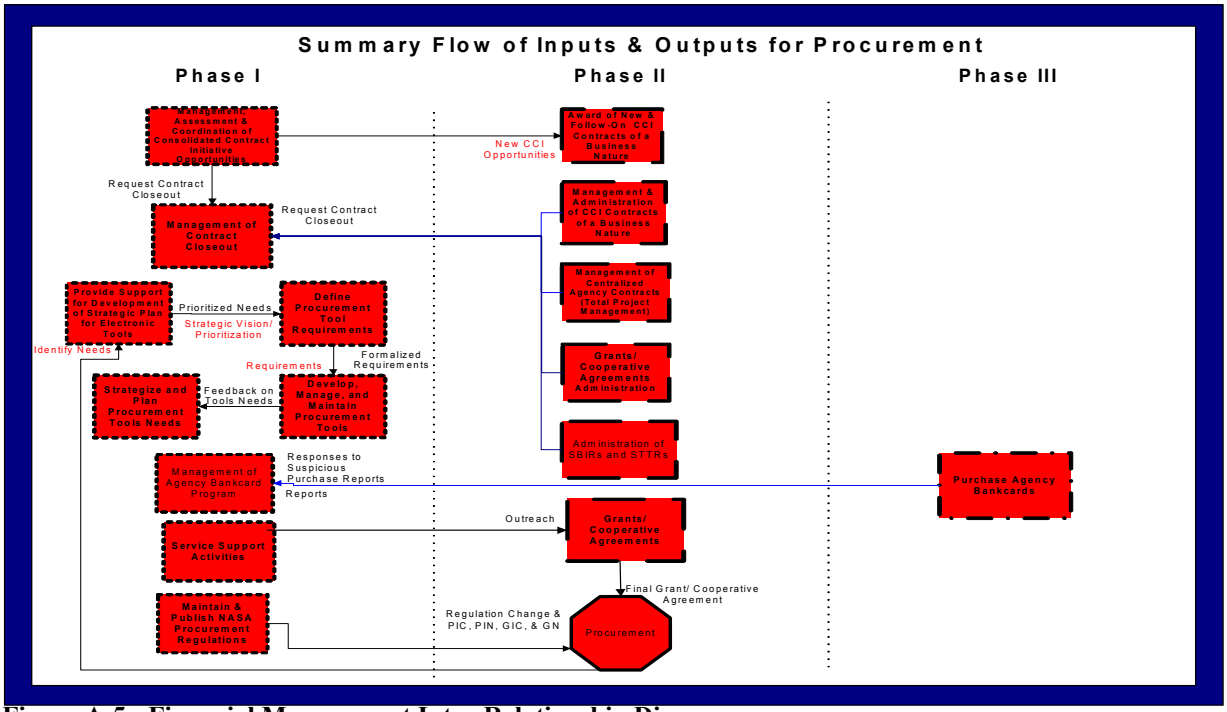



**Figure A-5: Financial Management Intra Relationship Diagram**

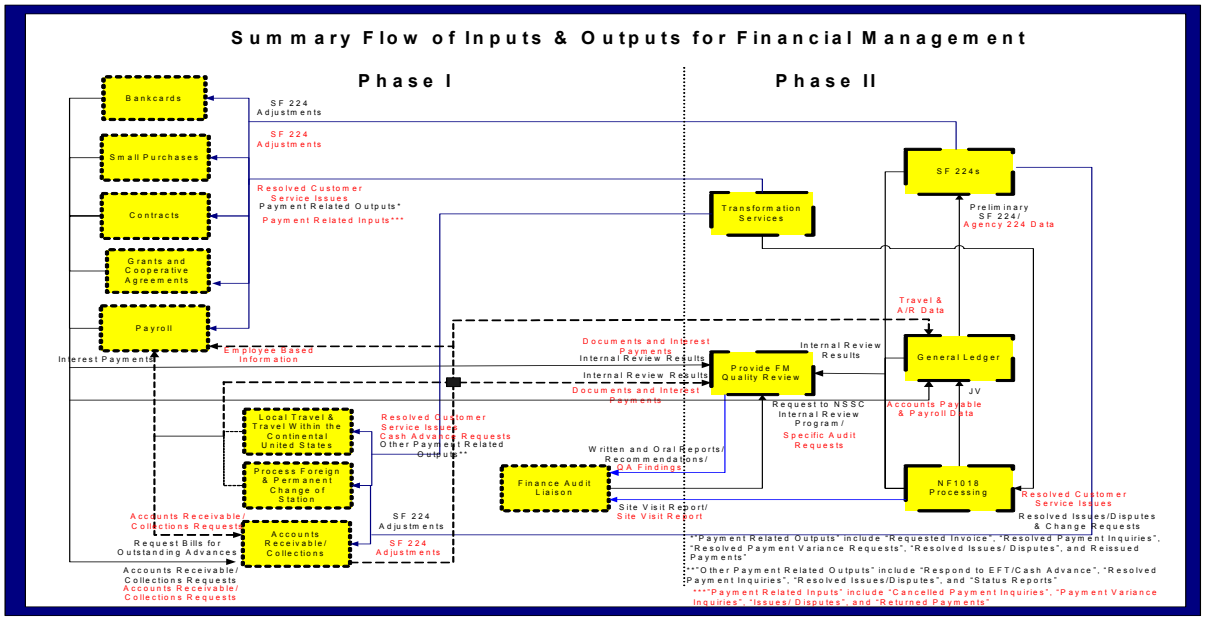
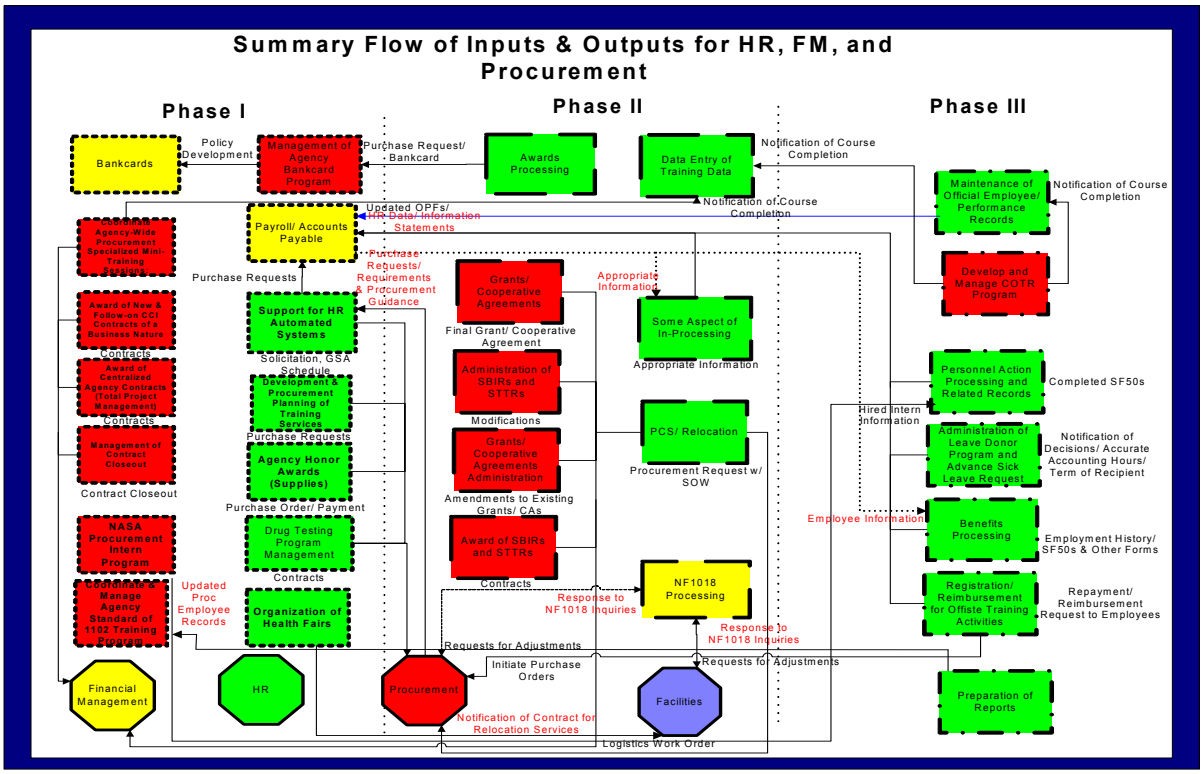



**Figure A-6: Functional Inter Relationship Diagram**



### A.3.2.2.3 Relationship Diagram Conclusions

The Inter and Intra Relationship Diagrams are a comprehensive and standard manner in which to display the interactions and relationships among and between the functional areas. These Relationship Diagrams provided the foundation for the subteams to further analyze the complexity of each of the functional activities. A functional activity with higher complexity would need more attention as it prepares for migration to the NSSC in order to ensure a smooth and seamless transition.

**Relationship Diagrams and Phasing Complexity/Risk Analysis**

### A.3.2.2.4 Phasing Complexity Approach

To ascertain which of the respective functional activities was inherently more complex than others; the subteams relied upon the Inter and Intra Relationship Matrices and the Inter and Intra Relationship Diagrams. The subteams assumed that the number of inputs and output handoffs from one functional activity to another is directly correlated to the risk involved in moving that functional activity to the NSSC.

### A.3.2.2.5 Phasing Complexity Process

To determine the risk level of activities, the number of handoffs involved in each function was recorded. The subteams developed the following template to capture the various handoff options.

**Table A-27: Complexity/Risk Analysis Template**

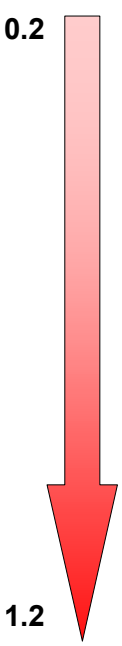
| # | Functional Activity | Provide Output N/A | Receive Input N/A | Provides Output Later Wave | Receives Input from Later Wave | Provide Output to Earlier Wave | Receives Input from Earlier Wave | Provide Output Same Wave | Receive Input Same Wave | Transacts with Other Functional Area | Total # of Input/Ouput Handoffs | Weighted Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Functional Activity #1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Functional Activity #2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Functional Activity #3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | Functional Activity #4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | Functional Activity #5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Each of the nine possible scenarios was assigned a weight to provide a discriminating factor for risk. The lower the risk, the lower the weight assigned to the scenario and the higher the risk, the higher weight the scenario received. The following list summarizes the nine categories and their respective assigned weights:

- Provide Output N/A (0.2)
- Receive Input N/A (0.2)
- Provide Output to a Later Wave (0.4)
- Receive Input from a Later Wave (0.4)
- Provide Output to an Earlier Wave (0.6)
- Receive Input from Earlier Wave (0.8)
- Provide Output to Same Wave (1)
- Receive Input from Same Wave (1)
- Transacts with Other Functional Areas (1.2)

The rationale for the nine scenarios and assigned risk weights are:

**Figure A-7: Explanation of Nine Scenarios and Risk Weighting Scheme**




- "Provide Output N/A" and "Receive Input N/A" were determined the least risky since they interact with activities not transferring to the NSSC
- "Provide Output to a Later Wave" and "Receive Input from a Later Wave" deemed more risky since they are interacting with functional activities that will transfer to the NSSC
  - Note that at the time the activities in question begin to transfer to the NSSC, those activities they interact with remain in the stable environment at the Centers or their original location
- "Provide Output to an Earlier Wave" is more risky that the previous group since the functional activity provides output to an activity that has already migrated to the NSSC
- "Receive Input from an Earlier Wave" is more risky than providing output since receiving input from an unstable source is less certain than providing data to an unstable source
- The 2nd most risky of all are "Provide Output to Same Wave" and "Receive Input from Same Wave." Both activities are in transition and the environment will not be as stable as if at least one activity was settled into operations.
- The category deemed most risky is "Transacts with Other Functional Activities." Operations across functional areas are less transparent than activities within functions

Once the Complexity/Risk Analysis Templates were populated, the weighted total for each functional activity was calculated. Next, the functional activities were sorted by decreasing final weighted values to place each of the functional activities into the following risk categories:

- High Risk
- Medium Risk
- Low/Medium Risk
- Low Risk

Note that for each functional area, relative criteria were developed for each of the risk categories. This is due to the fact that some functional areas had more handoffs than others. Therefore, each functional activity categorized its activities based on the natural breaks in the distribution.

Prior to reviewing the results of the above risk/complexity activity, each of the functional subteam members was asked to submit their nominations for the most risky functional activity and to provide supporting reasons. Each functional subteam member completed and submitted the following template.

**Table A-28: Risk Categorization for functional NSSC Activities**

| # | Functional Activity | Reason(s) for Identifying Activity as High Risk |
|---|---|---|
| 1 | Functional Activty #1 | |
| 2 | Functional Activty #2 | |
| 3 | Functional Activty #3 | |

Once all of the completed templates were gathered from the functional subteam members, the results were compiled. The subteams were then able to compare and contrast the results of the two 'risk analysis' activities. One of these activities was more qualitative while the other relied more on intuition and other non-measurable factors. Below is the comparison of both risk activities.

### A.3.2.2.6 Phasing Complexity Output

The following tables feature the results of the risk analysis categorization from both subteam activities for each of the NSSC functional tasks.

**Table A-29: SIPOC-based Risk Categorization for HR NSSC Activities**

| High Risk |
|---|
| Benefits processing |
| Maintenance of Official Employee/Performance records |
| Personnel Action Processing |
| Some aspects of in-processing |
| Preparation of reports |
| **Medium Risk** |
| PCS/ Relocation |
| Administration of Leave Donor Program and Adv Sick Leave Request |
| Award Processing |
| Support for HR automated systems |
| Data entry of training data |
| Administration and oversight of on-line Agency training |
| Administration and oversight of training data systems and requirements |
| Processing of outside employment |
| User support/expertise for Center HR data users |
| **Low/Medium Risk** |
| Registration/reimbursement for off-site training activities |
| HR Information System |
| Personnel Security |
| Survey and Assessment Data Gathering and Delivery |
| Production of informational materials |
| Drug testing program management |
| Agency Honorary Awards (Supplies) |
| Development and procurement planning of training services |
| Organization of Health Fairs |
| **Low Risk** |
| Responding to general employment inquiries |
| Coordination of position classification appeals |
| Recruiting Logistics (Formerly College Relations) |
| Preparation and distribution of employee notices |
| Selected special HR studies of agencywide interest |
| Advisory Services for HR Specialist |
| Agency Honorary Awards (External) |
| SES Case Documentation - Rank Awards and Bonuses |
| SES Case Documentation - Appointments |
| Processing of training notifications+D24 |
| Financial Disclosure administrative processing |
| Web-site development |

**Table A-30: HR Subteam Risk Survey Results for HR NSSC Activities**

| # | HR Functional Activity | Summary | # of Votes |
|---|---|---|---|
| 35 | Personnel Action Processing | The volume of actions at NSSC will necessitate earlier, more rigid deadlines for submitting actions. The NSSC's lack of knowledge about the organizational situational will negatively impact the error rate and create tension. Complexity of electronic process for 52s; uncertainties related to e-payroll (DOI); and tie it to OPFs #34, close interactions with other functions, activities and technology, visiablity of activity will set tone/trust/success perception of the NSSC. Lots of unknowns at this point. | 8 |
| | | | |
| 34 | Maintenance of Official Employee/Performance records | This is the baseline for all actions processed. This activity has five supplier processes that are concurrently in transition to the NSSC, which may further complicate handoffs from one process to another. OPF folder data impacts many other processes and activities. If the OPF data is not electronic, those activities interacting with the OPF activity will inherit an added level of complexity. Timing will result in movement of records to NSSC prior to electronic OPFs. The need for access to certain, specific information at the Centers on the parts of employees, managers and the HR staff will be complicated. At this point, there is much uncertainity concerning making OPFs electronic. | 6 |
| | | | |
| 23 | Benefits processing | NASA culture and employee morale, customer service will be negatively impacted by the loss of face-to-face counseling. Senior management will continue to demand local service. Complex inter-relationships with other activities and functions and outside entities | 4 |
| | | | |
| 15 | Registration/reimbursement for off-site training activities | Integration with the new NASA On-Line Registration System (NORS) which is currently not mandated for use across the agency. Also, critical touchpoints with the financial systems (Purchase Card, Purchase Requests and SAP Core Financial and Budget between Centers and NSSC). Speed of processing "last minute" transactions. This is centralized at DFAS and it is a nightmare; must be automated otherwise too difficult to coordinate; budget tracking is a concern; risk of local HR office losing touch with what is happening in this area. | 3 |
| | | | |
| 9 | Advisory Services for HR Specialist | Although these advisory services are on transactional and operational aspects, HQ will lose their awareness of current Center concerns which can lead to policy changes. Not a clear line between NSSC operational guidance and HQ interpretive policy guidance. Seems to re-define the role of the Headquarters program managers as the Agency experts in certain functional program areas | 2 |
| | | | |
| 20 | Development and procurement planning of training services | Requires coordination and interface with several external sources such as procurement, managers/supervisors and outside vendor to develop and procure services. Training assessments must be done locally. | 1 |
| | | | |
| 27 | Some aspects of in-processing | There are multiple (3) processes transitioning from the supplier aspect that are co dependent on an employees input either electronically or through paper. Breakdown of either process leads to failure on multiple fronts. | 1 |
| | | | |
| 31 | HR Information System | Domino effect. Whenever HR systems crash other processes come to a screeching halt as well. | 1 |
| | | | |
| 10 | Agency Honorary Awards (External) | Takes advance long term planning; coordination from external sources such as Headquarters for presenters, speakers; preparation; logistics, etc. | 1 |

As may be observed from the above tables, the HR Subteam had similar risk classifications for the NSSC HR activities. Both the HR Subteam and the SIPOC-based risk activity ranked the following three activities as potentially risky: Personnel Action Processing and Related Records, Maintenance of Official Employee/Performance Records, and Benefits Processing. The HR Subteam found "Registration/ Reimbursement for Off-site Training Activities" to be relatively complex while the SIPOC-based activity assigned the same activity at the top of medium risk. The two activities that the HR Subteam noted as potentially complex, whereas the SIPOCs did not record many handoffs are "Advisory Services for HR Specialist" and "Agency Honorary Awards (External)". For the most part, both activities identified the same activities in terms of most complex/risky.

## Table A-31: Risk Categorization for Procurement NSSC Activities

| High Risk |
|---|
| Management of Agency Bankcard Program |
| Define Procurement Tools Requirements |
| Develop, Manage, and Maintain Procurement Tools |
| Award of New & Follow-On CCI Contracts of a Business Nature |
| **Medium Risk** |
| Management of Centralized Agency Contracts (Total Project Management) |
| Grants/Cooperative Agreements Administration |
| Administration of SBIRs and STTRs |
| Grants/Cooperative Agreements |
| Provide Support for Development of Strategic Plan for Electronic Tools |
| Coordinate & Manage Agency Standard of 1102 Training Program |
| NASA Procurement Intern Program |
| Coordinate Agency-Wide Procurement Specialized Mini-Training Sessions |
| Management of Contract Closeout |
| Develop & Manage COTR Program (Refresher Training) |
| Award of SBIRs and STTRs |
| Management, Assessment & Coordination of Consolidated Contract Initiative Opportunities |
| **Low/Medium Risk** |
| Management & Administration of CCI Contracts of a Business Nature |
| Maintain & Publish NASA Procurement Regulations |
| **Low Risk** |
| Systems Support of SRBA |
| Electronic Distribution & Handling of Customer Surveys |
| Award of Centralized Agency Contracts (Total Project Management) |
| Management of Self-Assessment Program Guide |
| Coordinate Performance of Contractor Purchasing System Review |
| Processing Unsolicited Proposals |
| Point of Contact for ULO & Special Financial Reporting |
| SRBA Support Activities |
| Train New Bankcard Holders & Approving Officials |
| Perform Bankcard Audits |
| Procurement Policy Advisor of SBIRs & STTRs |

## Table A-32: Procurement Subteam Risk Survey Results for Procurement NSSC Activities

| Procurement Functional Activity | Summary | # of Votes |
|---|---|---|
| Grants/Cooperative Agreements | Workforce issues - Cultural resistance, new staff, lack of expertise. Grants is such a parochial little niche that the mere process of determining which grants will go to the NSSC and which grants are "center-specific enough to stay" will be a daunting political task. The actual processing of the grants will not be difficult, but the external forces that surround the grants world will be tricky to manage. Transition challenge due to the importance of grants to our technical community and the university community. There is a high volume of activity with the expectation of rapid response times. However, the process is presently paper-based with different processes at each center. Risk is that customers will be vocal if staffing is not adequate to provide short lead times.. Roles/mission/workload disconnects between NSSC personal and the cognizant Inherently Governmental Contracting Officers. Decentralized nature of requirements customers. | 6 |
| | | |
| Award of SBIRs and STTRs | New contracting and technical folks could be a problem. Both sides have to learn together. By not being at a field center, you increase the start up risk of not having some experienced people ready to go. Even then, it is hard to attract the right talent to keep things going. Complex transition challenge due to the current process that requires large numbers of awards to be made within a very short period of time. Risk is that the NSSC will not have adequate staffing flexibility to accommodate a major spike in workload. A mitigating approach would be to resolve the policy/process question before attempting to transfer the work.Cultural resistance. Roles/mission/workload disconnects between NSSC personal and the cognizant Inherently Governmental Contracting Officers. Decentralized nature of requirements customers.The SBIR program is running like a well oiled machine today. It will be a challenge for the NSSC to transition this activity while continuing to provide excellent support. | 3 |
| | | |
| Define Procurement Tools Requirements | With the transfer of the NAIS team management from MSFC to HQ (further complicated by the loss of one of the NAIS Team founders Jim Bradford), the NAIS team participation has dropped significantly. What was once an agency-wide collaborative effort to determine the Procurement e-tool needs of the Procurement community (for the people by the people) is now a skeleton crew. Difficult to get Center consensus on anything electronic, let alone to prioritize solutions, massive cultural issues with effectively accomplishing any change in the e-tools area. The development of procurement tools traditionally has been unfocused and underfunded. Expectations of what NSSC should do in this area may be higher than what it can accomplish. | 3 |
| | | |
| Award of Centralized Agency Contracts (Total Project Management) | If NSSC assumes ongoing contract activities, then the need for some experienced people is critical. Even if they just award new contacts, contracts can have critical need dates. Things need to get completed when the customer needs the product. Orders under these contracts will be issued by the NSSC and not each center. The NSSC will have sole responsibility to make sure these contracts and orders are kept current so that service to the centers is not interrupted. | 3 |
| | | |
| Management & Administration of CCI Contracts of a Business Nature | Some of the planned CCI activities are very complex (ODIN). If NSSC assumes ongoing contract activities, then the need for some experienced people is more critical. | 2 |
| | | |
| Train New Bankcard Holders/Bankcard Audits | This is a cumbersome program to run on a center by center basis due to all the cardholders and the propensity of some to violate bankcard rules/policy [for example: purchasing "oneseys and twoseys" (rather than group buys) in an attempt to stay within the micropurchase threshold, etc.] When ALL the centers are combined into one large bankcard program, the training of thousands of cardholders, the necessary audits, the process of dealing with cardholders that violate bankcard policy will be extremely challenging in my opinion. | 1 |

As may be observed from the above tables, the Procurement Subteam had similar risk classifications for the NSSC Procurement activities: Grants and SBIRs featured fairly highly on both sets of analysis, showing that while from a SIPOC perspective they are not the most complex of activities, outside pressures play a role in their transition to the NSSC. A similar consensus was reached on the technology requirements for Procurement, suggesting that these activities should be carefully monitored. For the most part, both activities identified the same activities in terms of most complex/risky.

**Table A-33: SIPOC-based Risk Categorization for FM NSSC Activities**

| |
|---|
| **High Risk** |
| NF-1018 Processing |
| Payroll |
| **Medium Risk** |
| General Ledger |
| SF244s |
| Provide FM Quality Review |
| Accounts Receivables/ Collections |
| Local Travel and Travel Within the Continental United States |
| Process Foreign and Change of Station |
| **Low/Medium Risk** |
| Contracts |
| Small Purchases |
| Grants |
| Bankcards |
| Finance Audit Liaison |
| **Low Risk** |
| Transformation Services |

**Table A-34: FM Subteam Risk Survey Results for FM NSSC Activities**

| FM Functional Activity | Summary | # of Votes |
|---|---|---|
| Accounts Payable | Logistics of getting files, housed will need a lot of lektrievers for the volume of files that Goddard alone will send. I think it will be important and somewhat of a challenge in making sure the files are complete and up to date before turnover. Moving the contracts/files (logistics) and getting everything set up in time to make the vendor payments when due is going to be a challenge. Many small vendors depend on receiving that government payment to make payroll. Keeping customer service at an acceptable level at start up of the NSSC is a must. Understanding with how SAP handles certain processes. The routing of invoices is one of these areas. We are spending a large amount of time tracking down invoices to ensure the vendor is paid on time. -- The payment of invoices on 533 contracts is another area that we are having problems. The posting of cost on 533 contracts can only be posted once a month.<br>This includes the posting of the prior month's cost in excess of obligations. SSC is currently spending a lot of time on this process coordinating this effort between the requisitioner, procurement, accounts payable and cost accountants. Before the cost can be posted to SAP, the cost accountant is having to ensure there will be enough cost in SAP to cover the next month's invoice. --The processing of Grants appears to be an area that will also involve a lot of coordination between the centers, NSSC and the customer. Payment of the Bankcard statement requires the cardholders to review and process their statements timely. The communication effort to resolve problems will be complicated by the distance between the NSSC and the Centers | 6 |
| | | |
| Accounts Receivable | Concern that the customer will get all the back-up information they need in order to pay their bills. It was one of the assumptions that all customers would receive the same information. We currently provide supplemental information to our customers | 3 |
| | | |
| Transformation Services | through on the non-routine items. Subsequently, the chain of command on making decisions and communicating them back to the customer and the Center, as appropriate, is very important. Also I don't know about the other Centers, but even within my own Center you can get a different answer depending on who you talk to. I think that a lot of training will be needed as well as hiring the "right" folks to fill these critical positions. Those who will be picking up these functions or a team of employees must visit the Centers (just as the other NASA consolidated activities have) to assist with the transition. Unlike in the past when employees didn't feel like their jobs were threatened, they probably won't have a good attitude in assisting the NSSC. this area is vital to the success of this entire endeavor. We've got to have that area staffed with folks who having a good working knowledge of regulations, policies, procedures and SAP. I am also concerned about the link between the customer service folks at each Center and the customer service folks at the NSSC and how that process will work.<br>And, finally, in this area, I am concerned about the staffing levels at the NSSC for this effort (financial management customer service) . If the Customer Service aspect of the NSSC is less that acceptable or falls apart altogether, criticisms will be many and will be justified. If we don's staff that area with employees having a knowledge of policies, procedures, processes, responsibilities, etc., then I don't see how they can help the customer effectively. The customer will become frustrated with us and we get a black eye. | 3 |
| | | |
| Domestic Travel | High visability, the real-time travel interface between travel manager and SAP has to happen before the NSSC. I understand that there is some question about the priority of the this interface with so many other hot items absorbing resources. Without the interface, there is the potential for vouchers to fail the edits and delay payment. | 1 |
| | | |
| SF 224 | SF 224 processing within SAP is complex and the time frame from the last posting of Treasury confirmations into SAP and the generation of the report to Treasury is very short. IPACs and the HHS interface add additional complexity to the process. | 1 |
| | | |
| General Ledger | Coordination and communication to resolve posting issues is complicated due to the number of players that can be involved in the function. The players include the NSSC, the FM organization at the Centers, the Agency Code B, and the Competency Center as distinct entities with differing responsibilities. | 1 |
| | | |
| | | |

As may be observed from the above tables, the FM Subteam had similar risk classifications for the NSSC FM activities. The FM Team also observed non-SIPOC identified reasons for their choices. Logistical and technical reasons are outside the scope of the SIPOCs, but are areas that would need to be considered when transition takes place. The SIPOC identified complexities show that while an activity may look complex in terms of quantity of interactions, if the process is fairly well understood, it may not present huge transition problems.

**Additional Comments and Observations:**
In addition to comments based on the SIPOC'd activities, the subteam members also offered thoughts on other areas of complexity and risk surrounding the NSSC. The following table demonstrates concerns around: human capital, communications, transition schedule and customer service.

**Table A-35: Additional Comments and Concerns**

| Theme | Comments |
|---|---|
| Human Capital | Staffing the Center with knowledgeable personnel is critically important. Just look at how challenging and difficult the SAP implementation was (and still is). We had personnel knowledgeable about NASA's business, they were trained on SAP, and it was still a very difficult transition. Not aware of anyone interested in moving to the NSSC. If few people transfer, then the NSSC will likely be staffed by personnel unfamiliar with NASA's way of doing business or unfamiliar with SAP. Its possible that it could take them much longer to adjust than it did the Center's when SAP was implemented. And the Centers still have much to learn and fix regarding SAP. Agree with the concept of asking existing employees to TDY to the NSSC for a period of time before and after the implementation to ensure as successful of a transition as possible. Only a very few (FTEs) would consider moving to the NSSC no matter where it is located. There were a couple of employees that would consider TDY to help train the new hires for the NSSC.<br>Based on our ancitipated workforce, quite a few of the jobs that are currently being done by civil service employees will be transitioned to support contractor employees. If the current employees are not interested in transferring, how are the "new" employees going to get trained? This also applies to the NSSC civil service slots that are currently being done at the center when the current employees are not interested in moving. The transition needs to include a risk that the centers will lose valuable employees prior to the transition taking place because they get another job. High risk and probability that the Centers will lose their most valuable employees prior to the transition ever taking place. |
| Customers | Concern that one person per Center will not be enough to handle the NSSC troubleshooting traffic that will come back to each Center. I see so much troubleshooting occurring at the present, its just very difficult to see one person handling the load, especially if they are on leave, training, TDY, etc. Perhaps other non-NSSC employees at the Centers will be able to help, but I expect that they will have their own jobs to do as well. The transition to one ALC is going to have to be coordinated very closely between the centers, HQ, NSSC, Treasury and our customers. |
| Transition/Scheduling | To suddenly stop work at one Center one day and pick the work back up at the NSSC the next day will be challenging. As during the SAP conversion, I'm sure our management and our contractors will expect us to not miss any payments, so we will have to be sure we do this right. I think the phasing of A/P and A/R is a great idea, and it will difficult enough doing 3 to 4 Centers at a time |
| Communications | This transition will require some rather intense and detailed coordination across the Agency, and not everyone will be happy about their work going away. It will be very important to communicate the schedule and the nature of the work that will transition to NSSC and the method in which the transition will take place. Clear and meaningful communication is imperative. In my opinion, it is important that coordinated efforts are taken at the Agency level and at the Centers to minimize any adverse impact to the employees and to the Center function (in our case FM) as a whole. |
| Unions | Cost savings can be impacted if personnel reassignments (for those remaining at the Centers) cannot be implemented as planned. Personnel reassignments is an area where the union may want to negotiate or discuss, and this could impact the timeliness of the reassignments and therefore the potential cost savings. |

### A.3.2.2.7 Phasing Complexity Conclusions

Overall, the SIPOC process and outputs provided the functional subteams with valuable information. This information was used to analyze the individual functional activities and to assess their potential riskiness as they prepare for phased migration to the NSSC. Any complex transformation effort involves risks. A risk becomes an issue if it is not identified and mitigated. The focus of the SIPOCs and the corresponding risk analysis was on the activities transferring to the NSSC. The NSSC sub-team developing the SIPOCs utilized the data collected to review the phasing and complexity of the individual activities, and looked across each function and then across all the functions to review how the activities looked on a macro rather than a micro perspective.

Risks involved in the transition for the activities involve the type of questions that the SIPOCs answer – namely, who are the suppliers of inputs and what are these inputs and where are outputs going to, and in what form. Multiple interfaces are more complicated than fewer interfaces, and when activities are moving, the timing of the moves affects not only the activities moving, but also activities that they interact with. Counting interfaces and timings was one element of the risk/complexity analysis.

However, counting interfaces and timings does not provide complete information. The intangibles are not evident in this type of analysis. Although an activity may look complicated, the process maybe mature, well documented and well managed. An activity that looks relatively straightforward may be heavily dependent on local knowledge, technology or be deeply embedded in the culture of a center - these factors also play a huge role in the successful migration to the NSSC. To capture this information the sub-teams were surveyed to provide their perspective on the quantitative issues.

The combination of these analyses raises the relevant issues surrounding the transitioning activities. The solution and mitigation of these issues would be resolved by a combination of the NSSC director and his team, the transition team and the offeror. The sub-teams sought the most appropriate timings for the transition of their activities, often moving the riskier, more complex activities to the later phasing waves, thus providing the activities the most stable platform to transition. Changes in the technical infrastructure of the Agency would also play a critical role in the success of the transition to the NSSC since many activities require new or improved technology resources. Other issues and observations identified provide areas of focus for the change management team and future teams.

### A.3.2.3 Development of Performance Metrics Baseline

#### A.3.2.3.1 Performance Metrics Approach

The development of the performance metrics baseline is a key element of any business transformation effort, of which the implementation of the NSSC is one such type of activity. Developing a baseline provides an objective, qualitative approach to analysing how effective the transition to the NSSC has been. The baseline is developed to measure the level of performance that currently exists within NASA, for the activities that are transitioning to the NSSC. The same measures are then recalculated after the transition to the NSSC when the activities have been able to stabilize. These results when compared to the initial baseline show the level of improvement achieved.

The goal when developing the baseline is to create measures that are relevant, simple and well defined, consistent, and non-invasive that are focused around the strategic objectives of the NSSC – namely, customer service, accuracy, efficiency and cost. Using the aforementioned as criteria would ensure that metrics are:

- Relevant: data would be actively used and support the strategic direction of the NSSC and the Agency

- Simple and well defined: a common understanding would be understood of the measure, how it is created and what it means (difficult to misunderstand and misinterpret) and reflect the performance of a parameter that is fundamental to the activity
- Consistent: can be continually measured to show trends and not a one time measure
- Non-invasive: easy to collect, analyze and maintain

Linking of all metrics to the strategic objectives of the NSSC would help focus the decision making process of choosing which metrics to track and baseline.

**A.3.2.3.2 Performance Metrics Process**

The process followed by the functional sub-teams to baseline activities transitioning to the NSSC was as follows:

- Define appropriate levels of detail, e.g.: Activity level, Activity group
- Define targets e.g.: NASA average performance, NASA Internal Benchmark, External Benchmarks, NSSC Goal
- Define characteristics: Cost, Efficiency, Accuracy, Customer Service
- Review leading practice example performance metrics
- Define appropriate Key Performance Indicators (KPIs) to Baseline

With the remaining steps to be completed by the follow-on NSSC Transition team:

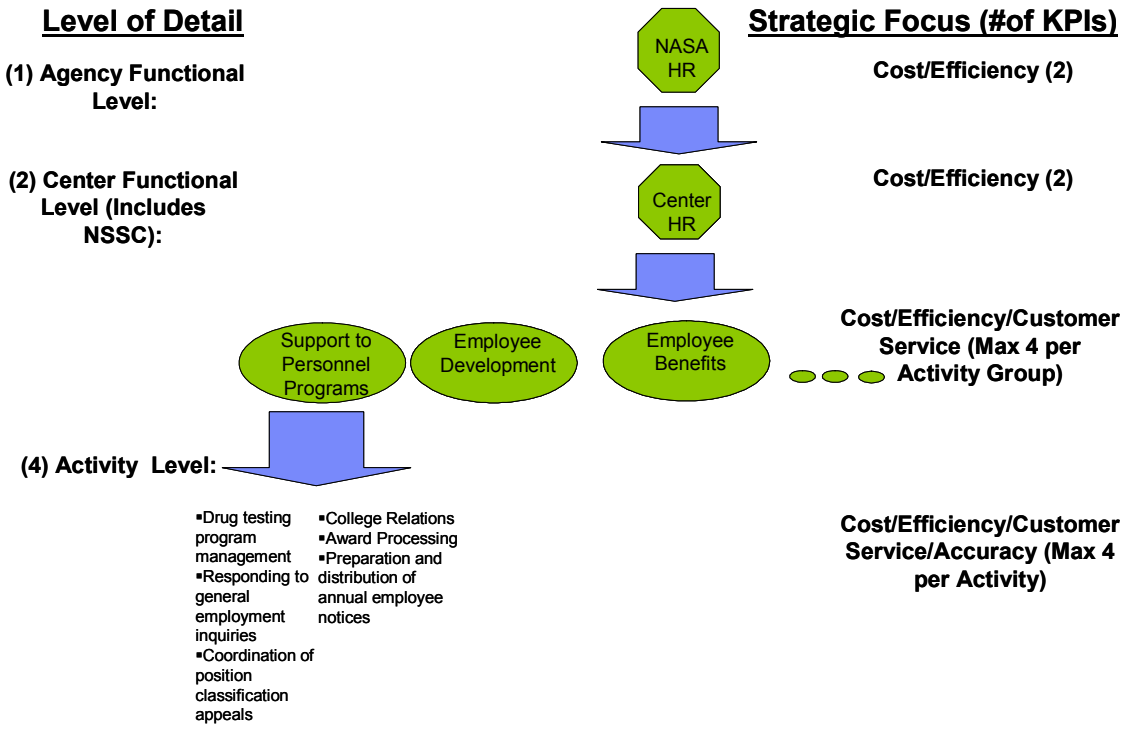
- Create data collection templates
- Collect data
- Analyze data

For each of the above steps the functional sub-team members who developed the initial candidates for transition, and participated in the SIPOC activity were involved due to their detailed knowledge of the activities. The initial stages of the work were completed in a workshop environment, with follow-up teleconferences to complete the development of the data collection templates.

**Define Appropriate Levels of Detail, e.g. Activity Level, Activity Group**

To gain consistency across the different functional areas, the following template was used to view the relationships of all the activities considered within the functions:

**Table A-36: Performance Metrics Relationship Diagram**




HR is used as an example above. At level (1) the highest level would be metrics defined for Agency wide HR. Level (2) contains the metrics for the different NASA Centers (including the NSSC). Level (3) contains the activity groups that the different functions defined to summarize the lower level activities, in the case of HR these include, Support to Personnel Programs, Employee Development, Human Resources Information Systems, Employee Benefits. And, the lowest level of detail, level (4) are the individual activities, in this instance the activities grouped under Support to Personnel Programs include: Drug Testing Program, Responding to General Employment Inquires, Award Processing etc.

The focus of the baselining effort was on the Level 4 area – the activity level. The strategic focus and number of metrics were recommended to drive consistency between functional areas. At the activity group level the span of strategic focus expands, as do the number of metrics, for at this level changes in performance would be more noticeable. At the activity level, the most precise focus, and greatest number of metrics are collected. It is at this level that the performance enhancements of the NSSC would be the most meaningful.

When looking at the appropriate level of detail, the overall number of metrics to be tracked was a key factor, to ensure the data collection process was thorough yet not overly burdensome. Little can be gained from spending three weeks collecting monthly data, and having no time to analyze and understand what the data means.

**Define Targets**
The definition of targets focuses on which groups would be included for measurement. The targets determined for the NSSC were:

- NASA Average Performance – the baseline, which would be determined by averaging the performance of the NASA Centers currently performing the activity
- NASA Benchmark Performance – determined as the best performing NASA Center that currently performs the activity. Tracking this indicator demonstrates an understanding the currently different NASA Centers perform at different levels
- NSSC Goal – the desired level of NSSC performance. This level would take into account the baseline, and the current highest performing Center to set a level that could only be achieved by the dedicated resources of the NSSC through its goal of continuous process and performance improvement
- External Benchmark – external benchmarking is a useful tool to understand the potential performance of the NSSC based upon similar organization's performance. An external focus would allow the NSSC to push for performance levels that are commensurate with the worlds leading organizations who operate under similar conditions to NASA

**Define Characteristics**
Linking measures to the strategic imperatives of the NSSC would strengthen their importance of such measures, and ensure only appropriate measures are considered. Collecting data for measures that do not directly support the mission of the NSSC serves little value. Furthermore, ensuring measures link to a strategic objective help to answer the question of "why" the measure is being collected. Examples of measures that meet the specific strategic imperatives include:

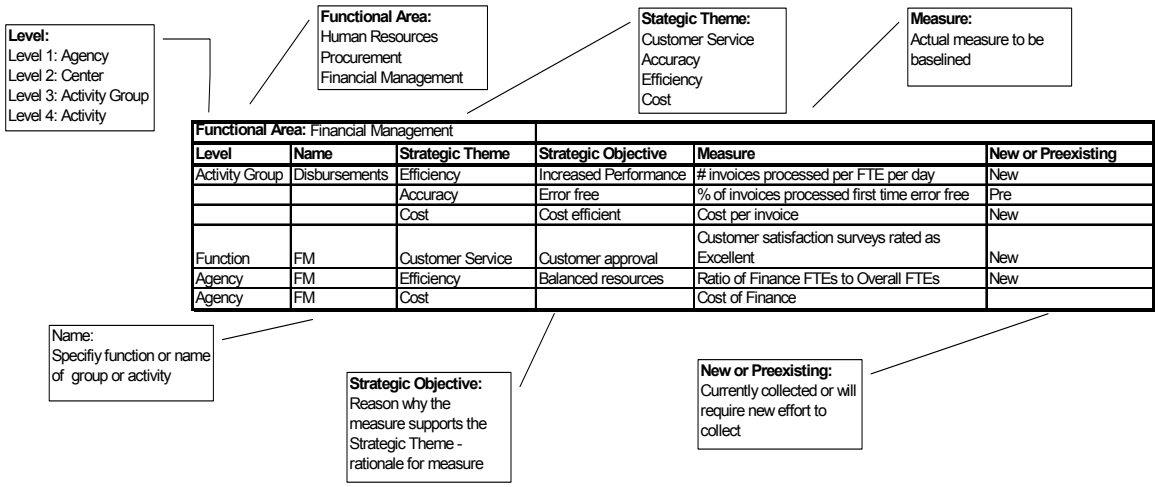
- **Customer Service:** % of inquiries resolved on first call, % of requests completed within specified time frame)
- **Accuracy:** # of transactions completed first time error free
- **Efficiency:** # of invoices processed per FTE per hour, ratio of functional FTEs to all FTEs
- **Cost:** cost of activity as % of budget, cost to process invoice

**Review Current NASA Metrics and Leading Practice Example Performance Metrics**
NASA has a large number of metrics at different Centers for different functions. One of the objectives of this exercise was to synthesize existing data, using a "One NASA" approach. Many sets of metrics were compiled into central repositories, along with external examples of metrics provided from a variety of sources including: IBM Global Benchmarking Program, Saratoga Institute, APQC. These metrics provided the foundation for the workshops where the subteams reviewed the data and linked them to the appropriate activities. In cases where the activity called for more specific data, the functional subteams created metrics as appropriate.

### A.3.2.3.3 Performance Metrics Outputs

The outcomes of the baseline activity were data collection templates that would be used to capture the required information (a complete set of data collection templates can be found in Attachment 2). An example of a sample template can be found below:

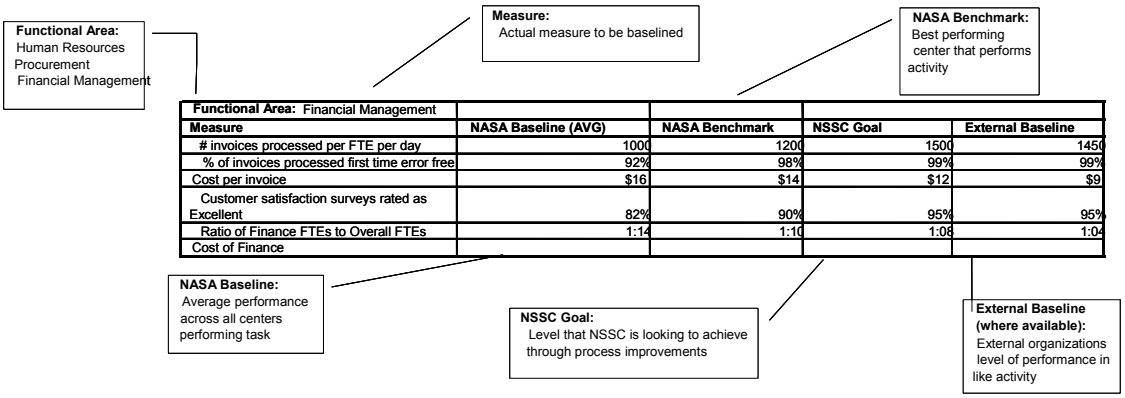
**Table A-37: Performance Metrics Data Collection Template**



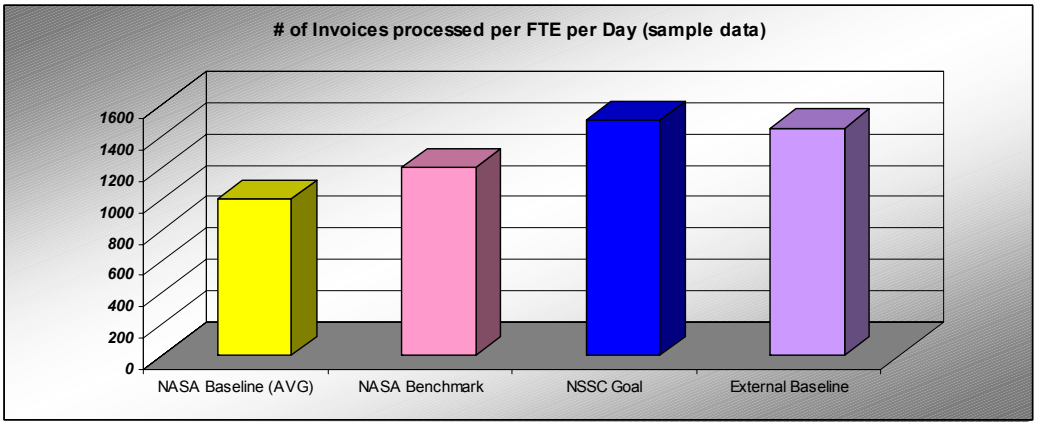

| **Functional Area:** Financial Management | | | | | |
|---|---|---|---|---|---|
| **Level** | **Name** | **Strategic Theme** | **Strategic Objective** | **Measure** | **New or Preexisting** |
| Activity Group | Disbursements | Efficiency | Increased Performance | # invoices processed per FTE per day | New |
| | | Accuracy | Error free | % of invoices processed first time error free | Pre |
| | | Cost | Cost efficient | Cost per invoice | New |
| Function | FM | Customer Service | Customer approval | Customer satisfaction surveys rated as Excellent | New |
| Agency | FM | Efficiency | Balanced resources | Ratio of Finance FTEs to Overall FTEs | New |
| Agency | FM | Cost | | Cost of Finance | |

The finalized output is envisioned to build on the data collection template and show the actual data in table and graphical format.

**Table A-38: Performance Metrics Final Output**




| **Functional Area:** Financial Management | | | | |
|---|---|---|---|---|
| **Measure** | **NASA Baseline (AVG)** | **NASA Benchmark** | **NSSC Goal** | **External Baseline** |
| # invoices processed per FTE per day | 1000 | 1200 | 1500 | 1450 |
| % of invoices processed first time error free | 92% | 98% | 99% | 99% |
| Cost per invoice | $16 | $14 | $12 | $9 |
| Customer satisfaction surveys rated as Excellent | 82% | 90% | 95% | 95% |
| Ratio of Finance FTEs to Overall FTEs | 1:14 | 1:10 | 1:08 | 1:04 |
| Cost of Finance | | | | |




#### A.3.2.3.4 Performance Metrics Conclusions

Each functional sub-team that developed SIPOCs were involved in the natural follow-on activity of suggesting performance measures that could be used to gauge the performance of activities as they transition to the NSSC. The focus of the metrics was to develop measures aligned with the strategic objectives of the NSSC: Customer Service, Efficiency, Accuracy and Cost. Each team examined the key aspects of the activities moving, and developed measures that could show performance improvements between current performance and future performance when the activities are established at the NSSC.

The suggested measures can be utilized by a variety of different audiences, including: the PWS development team, the Executive Director and functional leaders at the NSSC and the Change Management team.

The PWS development team would further examine, and clarify the measures to populate the agency solicitation. The suggested measures would assist in defining the key areas of the activities as envisioned by the functional sub-team members, and where necessary the measures can be further developed. The Executive Director and his/her team can use the suggested metrics as a starting point for development of SLA's and cost reimbursement. The suggested measures include quantity and quality metrics, which the sub-teams believe relate to the fundamental aspect of the transitioning activities. A key to change management is measuring the degree and nature of success. The suggested performance metrics can provide the objective measurements necessary to confidently celebrate victories.

## A.4 Implementation: Implement Operational Change Effectively

As mentioned previously, the current initial operations date for the NSSC is October 2004 followed by the proposed NSSC facilities activation date of October 2005. Though the Team has a detailed Implementation Plan, the NSSC would realize its potential only if the ensuing operational change is successfully managed. To ensure a smooth transition from NASA's current business model to the NSSC, the Team must anticipate issues and obstacles that would inevitably

arise throughout the Stages of the NSSC. These potential risks and challenges must be adequately addressed in a mature transition strategy prior to the startup of the NSSC.

## A.5 Transformation & Stabilization: Stabilize Change and Identify and Implement Continual Process Improvements

During the "Transformation & Stabilization" stage a future NSSC Team would stabilize change and implement continual improvements and process reengineering. Paramount to the success of the NSSC would be a commitment to proactively improve services and to pursue additional candidates for transition to the Shared Services Center. The NSSC would be dedicated to assessing, enhancing, and continually improving the delivery of shared services to its customers. The NSSC would investigate, develop, and partner transition and cross-functional integration opportunities on a continuous basis by applying process reengineering and systems engineering methods to operating units to develop a scope of work for the integration initiative. Throughout the "Transformation & Stabilization" stage, the NSSC would continuously assess and benchmark internal processes to look for ways to improve services.

## A.6 Overarching Activities

There are a number of activities that do not fit into a single stage in the lifecycle of the NSSC. Rather, these activities take place throughout the entire project and support the overall concept of the NSSC. These activities include:

- Benchmarking
- Competitive Strategy
- Cost Analysis
- Implementation Team Project Management
- Implementation Team Scheduling
- Change Management

### A.6.1 Benchmarking

Benchmarking provides insights into other organizations' shared services operations. Benchmarking is used to assess the performance and leverage the experiences of other organizations as they move towards a shared services environment. Benchmarking provides real examples of organizations, to review how they are set up, how they are managed, what lessons they learned and what things they would have done differently were they to repeat the process. Several site visits were arranged to government and private sector organizations.

The key objectives of the site visits are to understand the following questions:

- Why did the organization implement Shared Services (SS)?
- What functions were transferred to SS?
- How long did implementation take from start to finish?
- What were the issues associated with implementation?
- What influenced the site selection?

- What is the governance structure?
- How did the organization deal with change management?
- What was the actual versus forecasted payback?
- What were the lessons learned?
- What metrics were used to measure performance?
- How is the organization funded?

Throughout the benchmarking visits, a number of core themes emerged from the different organizations currently hosting a shared services environment. Some of these themes found in successful shared services environments are as follows:

- Focus on the customer's needs
- Develop performance metrics to gauge future performance
- Develop SLAs to assure and maintain service quality
- Project buy-in from top level management is critical for success

## A.6.2 Competitive Sourcing

Further to the activities documented in the Preliminary Implementation Plan of April 2003, the following provides an update based on the modifications to the A-76 Circular by the OMB issued in final state in May 2003.

### A.6.2.1 Competitive Sourcing Approach

NASA would not conduct a direct conversion process as described in section A.6.2.3 in the Preliminary Implementation Plan, since this option no longer exists under the revised A-76 Circular. The Agency would conduct a public-private competition under the guidance of OMB Circular A-76. The time frame for this competition is anticipated to be eighteen months. This time frame begins at the time of the public announcement and ends at the performance award decision.

### A.6.2.2 Competitive Sourcing Process

For NASA to perform a competition of this type, the A76 process would need to be followed with its associated roles and responsibilities. Initially, the Competitive Sourcing Official (CSO) must appoint five competition officials. These five individuals perform key roles and have essential responsibilities for the successful completion of the competition. These five officials are: Agency Tender Official (ATO), Contracting Officer (CO), Performance Work Statement (PWS) Team Leader, Human Resources Advisor (HRA) and Source Selection Authority (SSA). Later, a PWS team, a Most Efficient Organization (MEO) team and a Source Evaluation Board would be selected. The Competitive Sourcing Official (CSO) is the Assistant Administrator for Procurement who is responsible for implementing the A-76 Circular.

**Source Evaluation Board Team**

Upon completion of the PWS requirements, the majority of the PWS team may transition to the SEB team. This complete team would ultimately provide a recommended performance decision to the Source Selection Authority (SSA) based on submissions from the NASA ATO/MEO team,

and the private industry responses. Prior to submittal of proposals and award, they would be responsible for handling all questions and inquires resulting from the solicitation.

**Performance Work Statement Team**
The lead of the PWS team has the responsibility to develop the PWS and Quality Assurance Survey Plan including supporting workload data and performance standards. The lead would also determine the Government Furnished Property and assist the Contracting Officer (CO) in developing the solicitation. The Contracting Officer is also a key member of the PWS team, and is independent of the ATO, MEO and the Human Resources Advisor.

**Agency Tender Official/ Most Efficient Organization Team**
The ATO has the responsibility to develop, certify and represent the Agency Tender (the NASA in-house proposal). The ATO team would work independently of the CO, SEB and the PWS team. One of the key roles of the ATO is to designate and guide the MEO team after the announcement of the competition. Other members of this team include the Human Resources Advisor (HRA) who would act in the capacity of employee and labor relations. The remainder of the team would be comprised of technical and functional experts, excluding any personnel who are directly affected by the solicitation. The team would be funded to allow for any outside help deemed necessary to complete the NASA tender.

### A.6.2.3 Competitive Sourcing Conclusions

Initial estimates of the Competitive Sourcing timeline show the conclusion of the competitive sourcing process would coincide with the intended activation date of the NSSC facility, the first quarter of FY06. To maintain this schedule the following key elements need to be addressed.

**Executive Agreement on Approach**
The Executive Council supported the initial proposal of the NSSC Implementation Team in regard to Competitive Sourcing Strategy utilizing Direct Conversion. Since this option is no longer viable under the new redesigned A-76 process additional briefings have been scheduled to brief the Executive Council (EC).

**External Approval**
No further OMB approvals necessary for performing the public-private competition using the guidance found in OMB Circular A-76.

**Team Activation**
The planned approach and process requires three separate teams to be formulated, the SEB, PWS and ATO/MEO teams led by the appropriate competitive sourcing officials. Any delays in appointing the competitive sourcing officials or formulating these teams could influence the overall time-line.

## A.6.3 Cost Analysis

The NSSC Implementation Team reviewed six functional areas within NASA including: Human Resources, Procurement, Financial Management, Resources Management, Information Technology, and Facilities. Within four of these functions, the Implementation Team recommended a significant number of functional activities or services for transition to the NSSC. The Implementation Team developed an NSSC migration schedule that highlights the various stages of the NSSC Implementation. The NSSC Implementation Team will also develop a NSSC governance structure, long-term financing strategy, and decide upon the ideal NSSC location.

The initial steps in the Team's analysis of costs were to collect data for the Current level of effort for those sub-functions identified to transition to the NSSC and to develop estimates for our Vision of the new entity. The following chart depicts the annual cost savings in aggregate salaries and benefits for civil servants and contractor costs by function. The chart also contains the forecasted total annual cost for the NSSC Vision and projected savings. Both sets of data include housing and IT operational costs.

**Table A-39: Total Functional Cost Analysis for Human Resources, Financial Management, Procurement and IT Functions**

| (FY02K$) | Total Annual Cost for NSSC Candidate FTEs in Current State | | | Total Annual Cost for FTEs in the NSSC Vision | | | Dollar Savings (+) or Dollar Loss (-) from Current State to NSSC Vision | | |
|---|---|---|---|---|---|---|---|---|---|
| Function | Civil Servants | Contractors | Total | Civil Servants | Contractors | Total | Civil Servants | Contractors | Total |
| HR | $6,401 | $6,312 | $12,713 | $2,078 | $7,766 | $9,844 | $4,323 | -$1,454 | $2,869 |
| FM | $10,690 | $7,261 | $17,951 | $5,128 | $8,262 | $13,390 | $5,562 | -$1,001 | $4,561 |
| Procurement | $8,660 | $3,849 | $12,509 | $3,967 | $7,383 | $11,350 | $4,693 | -$3,534 | $1,159 |
| Subtotal | $25,751 | $17,422 | $43,173 | $11,173 | $23,411 | $34,584 | $14,578 | -$5,989 | $8,589 |
| IT* | $13,426 | $101,586 | $115,012 | $13,426 | $101,586 | $115,012 | $0 | $0 | $0 |
| Total | $39,177 | $119,008 | $158,185 | $24,599 | $124,997 | $149,596 | $14,578 | -$5,989 | $8,589 |

* Information Technology requirements remain constant

The implementation of the NSSC will result in a net cost savings for civil service salaries and contractor costs. The number of Civil Service FTE's associated with HR, FM and procurement will decrease from 321 to 119, a decrease of approximately 63% as the result of shifting non-inherently Government activities to the contractor. Contractors will increase from 218 to 291, an increase of approximately 33%. Overall the total number of FTE's will decrease by approximately 24%. This portion of the cost analysis indicates that the NSSC will save approximately $8.6M (FY02$) a year in salaries and associated costs.

Each of the sub-teams also developed a phasing plan by fiscal year, delineating when functions will transition to the NSSC. The plans are based on site availability and dependence on IFMP for HR, FM and Procurement. The transition for these areas will begin in FY2005 and end in FY2007. The management of IT will transition to the NSSC site in FY2005, with the majority of the activity remaining at MSFC and being managed on a virtual basis starting in FY2004. It is anticipated that IT will generate a savings as the Agency moves towards more Agency-wide systems. These savings will be re-invested near term, accelerating the Agency's transition through NSSC stabilization. Subsequent savings can be re-directed to Agency priorities.

### A.6.3.1 Assumptions

Assumptions used to complete the net present value analysis:

- NSSC facility operations will commence the first quarter of fiscal year 2006. Civil servants and contractors required for the first quarter of FY06 are hired/transferred one month prior to their need date
- Transition labor costs for those civil servant employees whose positions have transferred is assumed to be covered in the Center G&A budgets for one year after the transfer of their responsibilities and are therefore not included in the primary cost analysis
- Ten percent of the civil servant positions at the NSSC will be filled by current employees transferring to the new site to assist in start-up and training
- Twenty percent of the contractor positions at the NSSC will be filled by existing contractor employees from across the Agency who will also aid in the transition
- Ten additional civil servants will spend six months at the site during the transition
- Transition and stabilization will be complete in FY2008
- Retirements and attrition for those civil servants affected by the transition will occur at the Agency projected average rate for each function. Earlyouts and buyouts are not factored into the analysis
- IT requirements will be the same for both the Current and Vision options
- The facility will be located at a neutral site. It will be leased and will be sized for 500 civil servants and contractor personnel. Lease costs are based on information provided by the GSA
- The NSSC will initially require an internal support team of twelve people
- Outfitting costs are estimated to be $5M (FY02$) for furniture, specific IT, utility and security requirements

The following estimating factors were used to quantify the cost of existing civil servants and contractors that are expected to transfer to the NSSC site, as well as costs associated with training at the NSSC and to re-train those civil servants whose work has transferred. The costs included in both the Current and the NSSC Vision includes allowances for housing and IT related costs. Those costs do not include an estimate for supplies and materials. Thus, a factor was developed based on input from the Centers. Since the Current scenario assumes a new leased facility, a factor was required to remove the housing costs included in the Current and Vision to prevent over stating these costs.

**Figure A-9: Cost Estimating Factors**

| | (Costs in FY02$) | | | |
|---|---|---|---|---|
| CS % Relocated to NSSC | 10% | | | |
| Contractors % Relocated to NSSC | 20% | | | |
| CS Relocation Expense/FTE | $12,000 | | | |
| Contractor Relocation Expense/FTE | $12,000 | | | |
| Housing $/FTE in Labor Totals | $5,360 | | | |
| Materials/Supplies/FTE | $2,000 | | | |
| Training - CS at NSSC | $3,500 | | | |
| Training - Contractor at NSSC | $3,500 | | | |
| Training - CS Transition at Center | $5,000 | | | |
| | **FY05** | **FY06** | **FY07** | |
| **Labor Stabilization Factor** | 10% | 8% | 5% | (percentage of CS/Contract FTEs retained to support the NSSC above the projected Vision totals) |

**Retirement/Attrition Rates for Transferred Functions**

| % of Current FTE | FY04 | FY05 | FY06 | FY07 | FY08 | FY09 |
|---|---|---|---|---|---|---|
| Procurement | 5.7% | 6.2% | 6.5% | 6.3% | 6.5% | 6.5% |
| Finance | 3.3% | 3.5% | 3.5% | 3.8% | 3.9% | 3.9% |
| Human Resources | 7.3% | 7.7% | 7.7% | 8.0% | 8.0% | 8.0% |

### A.6.3.2 Labor Assessment

The overall baseline, current activities identified for consolidation and the NSSC Vision are summarized in the following table. Since only an IT Vision was developed, the same levels were used for both the current state and the NSSC Vision. New requirements for the NSSC business office and security at the NSSC site are also included.

**Table A-40: NSSC Personnel Summary**

| | Baseline | | | FTEs Identified as NSSC Candidates | | | NSSC Vision | | |
|---|---|---|---|---|---|---|---|---|---|
| Functions | Civil Service | Contractor | Total | Civil Service | Contractor | Total | Civil Service | Contractor | Total |
| HR | 390 | 179 | 569 | 79 | 76 | 155 | 21 | 94 | 115 |
| Procurement | 846 | 96 | 942 | 100 | 44 | 144 | 40 | 91 | 131 |
| FM | 384 | 163 | 547 | 142 | 98 | 240 | 58 | 106 | 164 |
| Subtotal | 1,620 | 438 | 2,058 | 321 | 218 | 539 | 119 | 291 | 410 |
| IT* | 838 | 3,695 | 4,533 | 118 | 553 | 671 | 118 | 553 | 671 |
| Business Office | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 |
| Facility Security | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 |
| Total | 2,458 | 4,133 | 6,591 | 439 | 771 | 1,210 | 249 | 854 | 1,103 |

* Information Technology requirements constant across any alternative

The summary below provides the percent of reduction estimated for each of the three primary functions. The first set of data reflects the percent of civil servant and contractor positions (current) identified as candidates to transfer to the NSSC as a percent of the total overall baseline. On average, 26% of the existing workforce is considered to be candidates. The second set of data displays the estimated reductions that can be realized by consolidation. The Team is

estimating that on average, the work can be performed with 76% (24% fewer) of the workforce currently performing those functions.

**Table A-41: NSSC Personnel Comparison**

| | NSSC Candidates as a Percentage of Baseline | | | Percentage of Current FTEs Needed to Staff NSSC | | |
|---|---|---|---|---|---|---|
| **FTE** | **Civil Servant** | **Contractor** | **Total** | **Civil Servant** | **Contractor** | **Total** |
| Procurement | 12% | 46% | 15% | 40% | 208% | 91% |
| Finance | 37% | 60% | 44% | 41% | 108% | 68% |
| Human Resources | 20% | 42% | 27% | 27% | 124% | 74% |
| Information Technology | 14% | 15% | 15% | 100% | 100% | 100% |
| Total | 20% | 50% | 26% | 37% | 134% | 76% |

### A.6.3.3 Savings Analysis

The following chart reflects the results of the Team's analysis. There are non-recurring costs included for facility outfitting, relocation, and training. Part of the savings from the transfer of the functions includes a materials/supplies and housing credit. The materials credit is based on the change in the total number of total FTEs and the materials costs associated with those FTEs. The housing credit is determined by the reduction in FTEs housed at the Centers multiplied by the average housing cost per FTE. Transition labor which includes the salaries, benefits and associated costs for the civil servants that are displaced as the result of their work being transferred to the NSSC are included separately at the bottom of the table for information only. These costs reflecting the required resources for a period of one year after transfer of responsibilities are not included in the primary analysis. A diminishing level of non-recurring costs continues through FY2009. Annual savings begin to accrue in FY2007 and total savings are assumed to stabilize in FY2010.

**Table A-42: NSSC Functional Savings Analysis**

| **(FY02 K$)** | FY05 | FY06 | FY07 | FY08 | FY09 | FY10 | Total |
|---|---|---|---|---|---|---|---|
| **Functional Savings** | | | | | | | |
| Human Resources | ($501) | $497 | $2,862 | $2,932 | $2,869 | $2,869 | $11,528 |
| Procurement | ($596) | ($489) | $340 | $1,101 | $1,159 | $1,159 | $2,674 |
| Financial Management | $0 | $2,553 | $4,551 | $4,551 | $4,551 | $4,551 | $20,758 |
| Functional Subtotal | ($1,097) | $2,561 | $7,753 | $8,584 | $8,580 | $8,580 | $34,961 |
| Materials/Supplies Credit | ($25) | $88 | $207 | $249 | $255 | $255 | $1,029 |
| Housing Credit | $66 | $900 | $1,797 | $2,161 | $2,196 | $2,196 | $9,317 |
| Subtotal Savings | ($1,056) | $3,549 | $9,757 | $10,994 | $11,031 | $11,031 | $45,307 |
| **Less NSSC Vision Costs:** | | | | | | | |
| Facility Lease | $778 | $2,335 | $2,335 | $2,335 | $2,335 | $2,335 | $12,454 |
| NSSC Consulting Services | $500 | $0 | $0 | $0 | $0 | $0 | $1,000 |
| Outfitting | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $0 | $5,000 |
| Relocation | $185 | $943 | $0 | $0 | $0 | $0 | $1,127 |
| Training | $32 | $1,462 | $804 | $325 | $23 | $0 | $2,646 |
| Support Office | $1,246 | $1,478 | $1,478 | $1,478 | $1,478 | $1,478 | $9,405 |
| Security | $333 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $5,333 |
| Subtotal NSSC Vision Costs | $4,075 | $8,217 | $6,617 | $6,138 | $5,836 | $4,813 | $36,966 |
| **Net Savings** | **($5,131)** | **($4,668)** | **$3,140** | **$4,856** | **$5,195** | **$6,219** | |
| Transition Labor Impact* | $0 | $20,388 | $4,188 | $1,739 | $0 | $0 | |

* The costs associated with displaced Civil Servant employees for a period of one year after their positions are transferred.

### A.6.3.4 Economic Analysis Results

Net present value calculations were made for ten and twenty years. The ECONPACK economic analysis tool was used to conduct the analysis. OMB Circular A-94, Appendix C was used as the source for discount rates for the two scenarios. The discounted payback period for the Vision is 4.6 years. The savings-to-investment improves from 4.4 in the ten-year model to 9.3 in the twenty-year analysis due to paying off the non-recurring investments.

**Table A-43: Economic Analysis Results**

| Period of Analysis | Discount Rate | Discounted Payback Period | Savings-to-Investment Ratio |
|---|---|---|---|
| 10 Years | 2.5% | 4.6 Years | 4.4 |
| 20 Years | 2.85% | 4.6 Years | 9.3 |

A sensitivity analysis was performed to determine the impact of varying the Vision labor and non-labor cost estimates. The results below indicate that the analysis is very sensitive to labor variations. A decision change in the ten-year analysis of 11.1% for the labor sensitivity analysis indicates that a labor increase of more that 11.1% in the Vision estimates would extend the payback period beyond ten years. More flexibility exists in the twenty-year model. Non-labor costs were not a major driver in the analysis.

**Table A-44: Sensitivity Analysis Results**

| Period of Analysis | Labor Cost Variation | Non-Labor Cost Variation | Decision Change – Labor Cost | Decision Change – Non-Labor Cost |
|---|---|---|---|---|
| 10 Years | -10% - +20% | -10% - +30% | +11.1% | NA |
| 20 Years | -10% - +20% | -10% - +30% | +14.3% | NA |

An additional economic analysis was conducted to evaluate the effect of including the transition labor and associated costs in the Vision estimates. The results showed that the Vision alternative is still the most economical approach for performing the functions proposed for the NSSC. The discounted payback period is extended to 9.5 years and savings-to-investment ratio reduced to 6.3 in the twenty year analysis. The labor cost sensitivity indicates a decision change if the Vision labor costs increase more than 8.6% over twenty years. For the ten year analysis, the discounted payback period remains at 9.5 years but the savings-to-investment ratio is lower at 1.4.

#### A.6.3.5 Conclusion

The implementation of the NASA Shared Services Center will provide NASA with a wide array of tangible and intangible benefits from improved services at lower costs and performance efficiencies to the support of "One NASA" and the PMA and promotion of strategic management of NASA resources. The NSSC will save $6.2M (FY02$) per year after FY2009, with a 4.6 year discounted payback period, based on the cost analysis outlined above. The NSSC will also enable NASA to continually review and re-engineer critical processes in order to constantly improve services provided Agency-wide. NASA can improve business service effectiveness and efficiency by consolidating key business and technical services into a shared services environment. The NASA Shared Services Center should be implemented in order to promote these and other Agency and government management improvements. The Implementation Team recommends that NASA aggressively pursue the implementation of the NASA Shared Services Center.

## A.6.4 Implementation Team Project Management

The project management subteam handles all project management activities. This includes scheduling of activities, change management, resource management, risk management, and technical management of contractor support. Program management activities are designed to establish control and oversight of the project, ensure progress is being made, and that issues and concerns can be quickly raised and resolved. Through control and oversight, information is gathered to help ensure decision-makers are aware of program status.

## A.6.5 Implementation Team Scheduling

The task of scheduling involves conducting analyses to compare planned performance with actual performance to assist in the successful outcome of the project. To accomplish this task:

- Program baselines are documented and maintained.
- Performance is monitored through identification, analysis, and documentation of variances from baselines.
- Options and alternate courses of action are developed to mitigate variances.
- Project plan is reviewed, analyzed, and updated as necessary to reflect any changes.

## A.6.6 Change Management/Integration Strategy

Large organizational-change programs are difficult to run; they require attention to strategy and tactics, knowledge and application of effective change principles, conviction of leadership, effective implementation methodologies, and measurement. The NSSC Initiative defines complex change. It is a multi-year, multi-process, Agency-wide consolidation effort designed to improve effectiveness and efficiency across the areas of Finance, Human Resources, Procurement and Information Technology.

This initiative holds much potential benefit for the organization and because of its magnitude would be met with resistance, fear and uncertainty; all very natural reactions to change. However, left unmanaged, those components of transition would compromise benefits

realization, destroy trust, and most certainly lead to failure. Given that the stakes are high, it is vital that a change management and integration effort be robust, proactive and help NASA and its people transition from one set of work to another in as seamless a way as possible.

Change work is designed to prepare individuals and the environment, short and long term, to successfully transition to new systems and processes, and realize business results. In this Shared Services initiative, particular interest should be focused on integrating change related work across each functional area. Stakeholders should have a consistent and positive experience with each change and we should leverage best practices and approaches from one area to other.

A robust change strategy includes approaches to understanding stakeholders, developing awareness and competency, supporting staff transitions and tracking results, which are represented in four categories:

- Learning
- Communication and Stakeholder Management
- Organizational Design
- Benefits Realization

The strategy itself integrates these components and is described in A.6.61.

### A.6.6.1 Comprehensive Change Management/Integration Strategy and Plan

The Comprehensive Change Management/Integration Strategy and Plan refers to the project plan for the introduction, awareness building, implementation and integration of change at the Agency level as well as an approach to Center specific implementation associated with the four functional areas. This strategy will be based on change management best practices and organizational development and include:

- An actionable plan of activities to compliment the overall project plan
- Performance metrics and reporting
- Change Readiness measures
- Best practices for change at NASA given it's unique culture
- Coordination of change work cross functional areas within NSSC and other Agency change initiatives
- Execution of Agency level cross cutting change management activities
- Outline for Center roll-out of each major component of change: learning, communication, organizational design, and benefits realization

### A.6.6.2 Learning Strategy to Support Transitions

A critical component of a successful implementation is stakeholder's ability to effectively transition to new tasks or job assignments. To that end, a variety of learning opportunities should be provided to develop new competencies to support changing roles and responsibilities. Staff

support includes a variety of formal and informal forums, resources, learning opportunities, coaching and one-on-one just in time training.

Included in this approach are the following elements:

- Identification of learning resources at the Agency and Center levels
- Identification of the training needs of the particular activities that are transitioning
- Standardization of approaches to learning across the project
- Availability of resources and tools to support and reinforce learning.
- Evaluation and reporting on effectiveness of learning
- Measurement of user acceptance and proficiency

### A.6.6.3 Communication and Stakeholder Management Strategy and Plan

Communication is an integral part of successfully implementing Shared Services among our stakeholder groups. Building awareness, commitment and understanding are vital and achieved by delivering clear, consistent, and credible messages, and inviting and acting on feedback. The team must focus on understanding stakeholders and tailoring messages to them across a variety of mediums.

A comprehensive list of stakeholders has initially been identified:

- HQ Management
- Center Directors
- Functional Managers/Directors of Administration at each NASA Center
- Functional (affected) Employees
- All Employees
- Unions
- Congress
- OMB/Other external entities

Actions associated with this component of change management include:

- Capitalizing on the current communication plan, create an integrated Agency level communication strategy, solidify key messages, and guiding principles
- Provide a process to identify and assess stakeholders position on the change acceptance curve
- Develop a process to collect and response to stakeholder feedback
- Determine preferred mediums of communication and best practices within the Agency and among Centers
- Provide a standard communication toolkit for Centers including leadership talking points
- Ensure the creation and execution of communication horizontally and vertically throughout the Agency and Centers
- Assure alignment and integration of communication efforts (planning, scheduling and execution)

- Leverage learning across functional areas
- Evaluate and report on communication effectiveness

### A.6.6.4 Organizational/Job Design and Alignment

Business process alignment is aimed at understanding and optimizing organizational structures, processes and relationships. This work takes an end-to-end view of: process structure, individual and group roles and responsibilities, job design, required skills, and performance measures, work group design, and integration of work across the organization. While the business process teams typically develop the actual workflow designs, developing and deploying the plan to the workforce is a shared activity with the change team.

*Organizational Design includes:*

- Designing reporting structures - Defining authority levels and accountabilities
- Designing roles - Defining roles and relationships
- Designing work groups - Defining how units or teams would work together
- Measuring performance – Defining how to measure the performance of people, and groups
- Creating cohesiveness - Providing alignment and collaboration between units and people.

Included in the approach are the following elements:

- An outline of the timing of job and organizational design efforts within each functional area
- Assessment of organizational impacts associated with design changes
- Creation of tools to support Center progress in realignment
- Plan for implementation and integration of new designs
- Expertise and consulting in organizational design
- Evaluation and reporting of effectiveness

### A.6.6.5 Tracking and Reporting of Benefits Realization

A critical component of the implementation is the definition and reporting of outcomes against intended results. Based on those outcomes, adjustments and improvement efforts can be launched and tracked continuously. The Shared Services initiative has identified the following benefits:

- Provides more consistent, high-quality, and timely services at lower cost
- Improves timeliness, accuracy, and consistency of information delivered to the customers
- Promotes strategic management of NASA resources and positions the Agency to capitalize on further innovation
- Supports the President's Management Agenda for improved government performance
- Promotes a "One NASA" Agency focus
- Sustains strong support for individual Centers through resident Customer Service Representatives
- Opportunity to achieve synergy across functions

- Achieves critical mass of "core" expertise to manage and perform shared services
- Reduces resources expended for institutional support areas
- Affords opportunities for continual improvement in each functional area as standardization and 'best practices' are incorporated

Benefits realization is focused on defining and implementing a methodology to track and report on identified benefits.

Actions to be taken:

- Support the Agency team in developing meaningful metrics for each of the benefits outlined above
- Provide support and feedback on data collection guides and survey instruments to track benefits
- Support Agency team in assessing outcomes and making adjustments where necessary
- Communicate and report on results

**A.6.6.6 Structuring Change Integration**

The Agency Transition Team, responsible for change integration, would be responsible for agency level change approaches and provide oversight and resources to Center transition teams. The team would be comprised of the NSSC Executive Director, Lead, and representative(s) from each functional area (Finance, Human Resources, Procurement, and Information Technology) as well as consultancy support.

High level roles/responsibilities of Change Integration Team:

- Serve as the focal points of effective change behavior and leadership
- Interface and provide resources/expertise to guiding coalition and sub teams
- Participate in the development and maintenance of the change strategy
- Identify a member of their team to be a point of contact for change. This would ensure consistency in approach and resources across functional teams.
- Attend quarterly face-to-face meetings. The first meeting is tentatively scheduled for late September to kick off this new process.
- Participate in regular bi-weekly telecons

In addition to having a change contact from each functional team, Centers would be asked to identify a point of contact, to support and coordinate the overall effort.

High level roles/responsibilities of Center Change Team:

- Serve as the change focal points for the project
- Coordinate with local resources to deliver communication and learning
- Interact with leaders and stakeholders
- Communicate best practices and learnings

- Participate in bi-weekly telecons
- Track and report on effectiveness

**A.6.6.7 Next Steps**

- Determine appropriate actions during project transition (communication networks review, creation of change integration milestones aligned with project plan, metrics)
- Develop roles and responsibilities, membership and approach to guiding coalition
- Assess and update Shared Services Website
- Identify change integration members and approach
- Develop briefing packages and talking points
- Establish contacts and share information with other Agency change initiatives leads (One NASA, IFMP, Full Cost, Human Capital etc…)

The Agency embarked on the business case and planning for this initiative in 2002 and is now at a point of communicating its intent and approach. This is a critical juncture because it announces significant changes to how NASA approaches certain kinds of work, who accomplishes that work, and how effectively it plans and executes changes that challenge the culture and structure of the organization.

# Appendix B: Functional Team Reports- Human Resources

## B.1 Functional Area Overview

The Human Resources staff at NASA serves as a business partner working with Agency management to promote and achieve NASA's critical mission goals. HR provides expert level advice on a wide array of human resources and employee development services to both managers and employees. NASA's HR community develops and administers a broad range of programs such as workforce planning and analysis, recruitment and staffing, compensation, leadership and organization development, employee development, employee benefits, family friendly services, performance management, and labor relations.

## B.2 Sub Functions / Activities Recommended to be Consolidated

The HR functions under investigation fall under the following five main categories:

- Support to Personnel Programs (1-15)
- Employee Development/ Training Programs Support (16-22)
- Employee Benefits and Services (23-29)
- Human Resource Information Systems and Reports (30-33)
- Personnel Action Processing and Recordkeeping (34-35)

The NASA Shared Services Center (NSSC) HR Subteam augmented, reviewed, and revalidated the original Study Team's list of HR functions acting as potential candidates for transition to the NSSC. The original Study Team recommended 35 HR functions for transfer to the NSSC. The NSSC HR Subteam added HR functions to the Study Team's original list bringing the total functions under review to 49. Of these 49, the HR Subteam originally recommended 40 functional tasks for migration to the NSSC for the Preliminary Implementation Plan that was released in April 2003. However, since April the HR subteam further analyzed the situation and combined certain activities with those already existing. The changes made to the list of HR functional activities since the Preliminary Implementation Plan are noted below the complete list of activities. The following is a current list of the 35 functions that the HR Subteam recommended for transition to the NSSC:

**Support to Personnel Programs**

1. Drug Testing Program Management
2. Responding to General Employment Inquiries
3. Coordination of Position Classification Appeals
4. Recruiting Logistics
5. Award Processing
6. Preparation and Distribution of Employee Notices
7. Selected Special HR Studies of Agency-wide Interest
8. Personnel Security

9. Advisory Services to HR Specialists
10. Agency Honorary Awards (External)
11. Agency Honorary Awards (Supplies)
12. Support for HR Automated Systems
13. SES Case Documentation – Rank Awards and Bonuses
14. SES Case Documentation – Appointments
15. Production of Informational Materials

**Employee Development/ Training Programs Support**

16. Registration/Reimbursement for Off-site Training Activities
17. Data Entry of Training Data
18. Administration and Oversight of Training Data Systems and Requirements
19. Survey and Assessment Data Gathering and Delivery
20. Processing of Training Notifications
21. Development and Procurement Planning of Training Services
22. Administration and Oversight of On-line Agency Training

**Employee Benefits and Services**

23. Benefits Processing
24. PCS/ Relocation
25. Financial Disclosure Administrative Processing
26. Processing of Outside Employment
27. Some Aspects of In-processing
28. Administration of Leave Donor Program and Advanced Sick Leave Request
29. Organization of Health Fairs

**Human Resource Information Systems and Reports**

30. Preparation of Reports
31. HR Information System
32. Website Development
33. User Support/Expertise for Center HR Data Users

**Personnel Action Processing and Recordkeeping**

34. Maintenance of Official Employee/Performance Records
35. Personnel Action Processing and Related Records

The following list contains all of the changes to the HR functional activities proposed for migration to the NSSC since the Preliminary Implementation Plan was released in April 2003:

- "College Recruiting" was renamed to "Recruiting Logistics"
- OSC Outreach Program – Certification was rolled into "Website Development", "Preparation and Distribution of Employee Notices", and "Development and Procurement of Training Services"
- Selected Special Training Studies of Agency-wide Interest was rolled into "Selected Special HR Studies of Agency-wide Interest
- "Development of HR Materials/Tools" was rolled into "Production of Information Materials"
- "Agency Honorary Awards" was broken down into two separate activities: 1) "Agency Honorary Awards (External)" and "Agency Honorary Awards (Supplies)"

- "SES Case Documentation" was also broken down into two separate activities: 1) "SES Case Documentation – Rank Awards and Bonuses" and "SES Case Documentation – Appointments"
- "Transactional Data Gathering and Reporting" was renamed to "Survey and Assessment Data Gathering and Delivery"
- "Processing of On-site Training Nominations & Related Follow on Activities" was renamed to "Processing of Training Notifications"
- "Development and Procurement of Training Services" was renamed to "Development and Procurement Planning of Training Services"
- "Preparation of Management Reports", "HR Data/Information Management", "EEO Information", "FEORP Annual Reporting" and "Agency Database Oversight" were all rolled into a single activity named "Reports"
- "Personnel Action Processing was renamed "Personnel Action Processing and Related Records"
- Overall, six activities were combined with others whereas two activities were added, resulting in a total of five fewer activities than the Preliminary Report that was released in April 2003. Note however, that the number of FTEs/WYEs remained constant. The FTEs/WYEs were merely allocated across the other existing HR functional activities.

## B.3 HR Functional Characteristics Matrix

The following table depicts Human Resources functional tasks categorized by services proposed to be consolidated, tasks requiring more study and services that would remain at the Centers and the Agency Office of Human Resources.

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Human Resources**<br><br>*49 Activities Reviewed* | ■ Personnel Program Support<br>■ Employee Development and Training Support<br>■ Employee Benefits and Services<br>■ HR Information Systems and Report<br>■ Personnel Action Processing & Recordkeeping<br><br>*(27% of HR FTEs)* | ■ Management Education Center at WFF | ■ Strategic Human Capital Leadership and Planning<br>■ Workforce Planning and Analysis<br>■ Workforce Recruitment and Retention<br>■ Workforce and Leadership Development and Capability Building<br>■ Employee Commitment and Workplace Environment<br>■ Strategic Management of NASA's HR Community |

The following table provides more details on the HR Services Remaining at the NASA Centers.

**Figure B-1: HR Services Remaining at Centers**

**Strategic Human Capital Leadership & Planning**

- Facilitating SHCP processes
- Leading key HCM legislative, policy & program initiatives
- Designing, developing, aligning, integrating strategic HCM processes, systems, tools
- Identifying & sharing best practices
- Defining HCM metrics & implementing HCM accountability system

**Workforce Planning & Analysis**

- Engaging & supporting managers in maintaining strategic perspective on total workforce (civil service, contractors, partners, etc.) & linking planned work requirements to needed workforce competencies
- Designing & developing processes and tools that align workforce planning with Agency strategic plans & processes and that facilitate Full Cost Management of the workforce
- Assessing & analyzing workforce trends & risks vis-à-vis long-term mission plans
- Translating & integrating workforce planning and budgeting processes with processes for recruitment, retention & development

**Workforce Recruitment & Retention**

- Defining & implementing Agency-wide recruitment & retention strategies
- Identifying new sources and developing new approaches for workforce recruitment: strengthening the pipeline
- Defining & implementing proactive approaches for retaining critical workforce competencies

**Workforce and Leadership Development & Capability-Building**

- Building programs that facilitate Agency-wide approaches to leadership selection & development, incorporating integrated succession planning
- Developing processes that facilitate workforce mobility
- Developing tools and processes for organizational & individual competency gap assessment and development planning
- Advising & facilitating options and solutions for managing culture and change
- Fostering learning and knowledge sharing for enhancing organizational capacity and employee development

**Employee Commitment & Workplace Environment**

- Leading in quality of work-life issues
- Ensuring a rewarding & supportive workplace environment
- Facilitating a performance culture that increases employee contribution, accountability and competence
- Balancing employee needs with achievement of organizational goals

**Strategic Management of NASA's HR Community**

- Anticipating the future and preparing HR for it
- Building capabilities of the HR community
- Identifying & sharing best practices
- Establishing & managing to HR standards of excellence

## B.4 FY02 FTE and Funding Baseline

The HR Subteam used templates to gather Civil Service FTEs, Contractor WYEs, and salary data for each of the HR functional tasks on a Center-by-Center basis. The HR Subteam estimated how many Civil Service and Contractors currently perform the functional tasks that were recommended for transition to the NSSC. During fiscal year 2002, there were an estimated 79 Civil Service and 76 Contractors performing those functional tasks recommended to migrate. The Civil Service (CS) to Contractor mix is approximately 51% to 49%.

The HR Subteam gathered FY02 Baseline data for the entire HR function across NASA. In fiscal year 2002, there were approximately 390 Civil Service and 179 Contractors for a total of 569 FTEs. Comparing the 155 FTEs recommended to transition to the NSSC to the total overall HR FTEs, approximately 27% of the HR FTE would transition to the NSSC, while the remaining 73% would be retained by the NASA Centers to support the strategic human capital activities.

## B.5 NSSC vision-end state

The HR Subteam estimated the number of FTE, both CS and Contractor, that would be needed at the NSSC to perform the functional tasks that were identified to transition to the NSSC. This estimate was derived based on the assumptions that there would be savings from consolidating work currently performed at 10 different locations and the implementation of appropriate automated systems. The subteam estimated that 21 Civil Servants and approximately 94 Contractors would perform the HR functional tasks, giving a total FTE of approximately 115 versus the current total of 155 total FTEs. The Civil Service to Contractor mix in the NSSC would be approximately 18% to 82%. Overall, the HR community would experience approximately a 26% reduction in total Civil Service and Contractor FTEs in those functional tasks earmarked for transition to the NSSC. The following table displays the changing of the workforce composition from current state to the NSSC vision:

**Table B-2: HR FTE Analysis**

| Changes in NSSC FTE/WYE (Current--> NSSC Vision End-State) | |
|---|---|
| Current Total FTE | 79.0 |
| NSSC Vision End-state FTE | 21.0 |
| Percent *Increase* in FTE | -73.4% |
| Current Total WYE | 76.0 |
| NSSC Vision End-state WYE | 94.0 |
| Percent *Increase* in WYE | 23.7% |
| Current Total FTE & WYE | 155.0 |
| NSSC Vision End-state FTE & WYE | 115.0 |
| Percent *Increase* in Total FTE & WYE | -25.8% |

## B.6 Estimated FTE and Cost Savings (Current Level vs. NSSC vision)

The total current aggregate salaries allocated to both Civil Service and Contractors is approximately $12.7M. In the NSSC initial state, those costs are estimated to be $9.8M. The cost savings from current state to NSSC initial state would be approximately $2.9M, giving the NSSC an approximate 23% reduction in costs.

## B.7 Interdependencies and Qualifiers Required for Implementation

Certain issues must be addressed to ensure successful transition of the Human Resources activities to the proposed NSSC. The Core HR module of the IFMP must be implemented to complete the transition of all identified functions. An automated system that meets all HR requirements must be in place prior to the migration of many of the HR functional tasks. The appropriate systems and tools must be in place to ensure that the HR activities proposed to move can be administered in a consolidated environment.

The IFMP schedule for the HR module has slipped and the implementation date is now under review. An opportunity for a more timely consolidation for some of the activities may exist through the Agency implementation of e-Payroll. In the e-Payroll effort, a consolidated service provider offers payroll and some HR transactional processing services. The Department of Interior, National Business Center's Federal Personnel and Payroll System (FPPS) has been

selected as the NASA payroll provider. FPPS offers automated SF-52/50 transaction processing with the capability to have managers and supervisors initiate actions through automated workflow. The automated workflow process permits electronic authentication/signature of the Notification of Personnel Action, SF-50 and can be printed wherever directed by the approving HR specialist. The Agency would implement e-Payroll by September 2004. The utilization of this capability by the NSSC, prior to IFMP Integrated Human Capital Management System (ICHMS) implementation, would be considered as the e-Payroll initiative matures.

Also the work processes must be standardized and a detailed workflow analysis on each of the functional tasks must be performed prior to the migration of the HR functional tasks. As noted in the functional phasing section from above, all subteams would utilize the SIPOC diagrams to document their workflow and processes.

## B.8 Conclusions

The Human Resources Subteam identified 35 functional tasks from the five main functional categories as prime candidates to migrate to the NSSC. These 35 candidate functions identified for migration employ approximately 27% of the total baseline figure for the HR function across the Agency. Initial analysis indicates that the NSSC would reduce aggregate HR salaries and associated costs from $12.7M to $9.8M, for a cost savings of approximately $2.9M (23%).

# Appendix C: Functional Team Reports – Procurement

## C.1 Functional Area Overview

NASA presently performs its strategic function of acquiring Agency goods and services through the efforts of approximately 800 civil servants and 100 contractor employees working in Procurement Offices at each of the nine NASA Centers. The NASA Assistant Administrator for Procurement and staff provide overall procurement direction for the Agency. Each Procurement Office provides expert advice and guidance to programs, projects and the institution on a full range of procurement issues from strategy development and requirements definition though the solicitation, evaluation and award process, continuing through successful management and administration of contracts. Advice provided by Center procurement offices is integral to establishing effective business management strategies at each center. Center procurement offices implement public policy through compliance with a variety of public laws and federal regulations. Finally, the offices of procurement are stewards of the public trust and work diligently to obtain the best value for the taxpayers' dollar.

## C.2 Sub Functions / Activities Recommended to be Consolidated

The Procurement functions under investigation fall under the following four main categories:

- Transactional Services
- NSSC Major Contracting Operations
- Workforce Development & Management Operations
- Procurement Electronic Business Systems

The initial Study Team recommended 32 procurement functions for transfer to the NSSC. The Procurement Subteam reviewed, augmented, and revalidated the initial Study Team's list of procurement functions as potential candidates for transition to the NSSC. The Procurement Subteam reviewed more than 100 activities. Of these, 43 were identified as appropriate for transfer to the NSSC for the Preliminary Implementation Plan issued in April 2003. However, since April 2003, the Procurement Subteam conducted further research and analysis to reorganize the activities, which resulted in a total of 29 activities proposed to migrate to the NSSC. This proposed reorganization was the result of combining similar activities to produce SIPOC diagrams, the purpose of which was to identify organizational interfaces and interdependencies. Since several of the activities had identical organizational interfaces, activities were combined to eliminate SIPOC redundancy. Therefore, the 43 discreet activities as originally identified would still be performed at the NSSC, but for the purposes of this report, activities were combined to produce a more concise list of 29 activities.

The following is a list of the 29 activities that the Procurement Subteam recommended for transition to the NSSC:

**Group 1 Transactional Services (Grants, Cooperative Agreements, SBIRs, and STTRs)**

1. Award of Grants/Cooperative Agreements

2. Grants/Cooperative Agreements Administration
3. Award of SBIRs and STTRs
4. Administration of SBIRs and STTRs
5. Procurement Policy Advisor of SBIRs & STTRs

**Group 2 –Major Contracting Operations (CCI Contracts of a Business Nature)**

6. Management, Assessment & Coordination of Consolidated Contract Initiative Opportunities
7. Management & Administration of CCI Contracts of a Business Nature
8. Award of New & Follow-On CCI Contracts of a Business Nature
9. Award of Centralized Agency Contracts (Total Project Management)
10. Management of Centralized Agency Contracts (Total Project Management)

**Group 3 - Workforce Development & Management Operations**

11. Coordinate & Manage Agency Standard of 1102 Training Program
12. NASA Procurement Intern Program
13. Coordinate Agency-Wide Procurement Specialized Mini-Training Sessions
14. Management of Agency Bankcard Program
15. Management of Self-Assessment Program Guide
16. Coordinate Performance of Contractor Purchasing System Review
17. Management of Contract Closeout
18. Processing Unsolicited Proposals
19. Point of Contact for ULO & Special Financial Reporting
20. Develop & Manage COTR Program (Refresher Training)
21. SRBA Support Activities
22. Train New Bankcard Holders & Approving Officials
23. Perform Bankcard Audits

**Group 4 – Procurement Electronic Systems and Tools**

24. Provide Support for Development of Strategic Plan for Electronic Tools
25. Define Procurement Tools Requirements
26. Develop, Manage, and Maintain Procurement Tools
27. Systems Support of SRBA
28. Electronic Distribution & Handling of Customer Surveys
29. Maintain & Publish NASA Procurement Regulations

The following activities were some of those originally identified separately in the Preliminary Plan, but were subsequently combined with related functions. The Procurement Electronic Systems and Tools group, for example, placed several activities into three general categories based on the timing and scope of the deliverable: 1) support of HQ strategic planning, 2) tools requirements definition, and 3) development and maintenance of procurement tools.

- Note that the following activities fall under the category "Define Procurement Tools Requirements:"
  - Establish Future Procurement System Requirements

- IFMP Procurement Module Coordination
- Electronic Commerce Coordination & Planning

- The following Procurement activities are now categorized under the heading "Develop, Manage, and Maintain Procurement Tools:"
  - Coordinate/Support NAIS Applications
  - Develop & Manage Procurement Forms
  - Develop & Maintain OneNASA Procurement Checklist Tools
  - Manage & Maintain Past Performance Database
  - Maintain/ Operate MBP Software
  - Procurement Data/Metrics System
  - Creation & Maintenance of Agency/Center Procurement Office Webpage
  - Centralized System Maintenance Support of AMS
  - Expanded IFM Helpdesk & Call Center
  - Maintain Acquisition Forecast Software
- Two of the activities under "NSSC Major Contracting Operations" namely "Management of Consolidated Contracting Initiative" and "Management of Existing CCI Contracts" were subsumed under the existing activities concerning the CCIs namely "Management & Administration of CCI Contracts of a Business Nature."

As with HR, note that the Procurement FTEs and WYEs would remain the same as before in the Preliminary Implementation Plan, but would be allocated across the reorganized Procurement functional activities.

## C.3 Procurement Functional Characteristics Matrix

The following table depicts Procurement functional tasks categorized by services that would be consolidated, tasks requiring more study, and services that would remain at the Centers.

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Procurement**<br><br>*109 Activities Reviewed* | ■ Transactional Services (Grants, Cooperative Agreements & SBIR/ STTR Processing)<br>■ NSSC Major Contracting Operations<br>■ Workforce Development and Management Operations<br>■Procurement Electronic Business Systems<br><br>*(15% of Procurement FTEs)* | ■ Subcategories of Simplified Acquisition Procurements | ■ Policy and strategic support<br>■ Center-Specific Mission Procurements |

## C.4 FY02 FTE and Funding Baseline

The Procurement Subteam gathered FTE and salary data for each Procurement functional task on a Center-by-Center basis. The Procurement Subteam estimated how many Civil Service and Contractors currently perform the functional tasks that are recommended for transition to the NSSC. During fiscal year 2002, an estimated 100 Civil Service and 44 Contractors performed

those functional tasks recommended to migrate to the NSSC. The Civil Service to Contractor mix is approximately 69% to 31%.

The Procurement Subteam gathered FY02 Baseline data for the entire Procurement function across NASA. In fiscal year 2002, the total was approximately 846 Civil Service and 96 Contractors, or a total of 942 FTEs. Comparing the 144 FTEs recommended to transition to the NSSC to the total overall Procurement FTEs, approximately 15% of the Procurement FTE would transition to the NSSC, while the remaining 85% would be retained by the NASA Centers.

## C.5 NSSC vision-end state

The Procurement Subteam estimated the number of FTE, both CS and Contractor, that would be needed at the NSSC to perform the functional tasks that transitioned. The Subteam estimated that 40 Civil Service and 91 Contractors would perform the Procurement functional tasks, giving a total of 131 FTEs. The Civil Service to Contractor mix in the NSSC would be approximately 31% to 69%. The following table displays the changing composition of the workforce from current state to the NSSC vision.

**Table C-1: Procurement FTE Analysis**

| Changes in NSSC FTE/WYE (Current--> NSSC Vision End-State) | |
|---|---|
| Current Total FTE | 100.0 |
| NSSC Vision End-state FTE | 40.0 |
| Percent *Reduction* in FTE | 60.0% |
| Current Total WYE | 44.0 |
| NSSC Vision End-state WYE | 91.0 |
| Percent *Increase* in WYE | 106.8% |
| Current Total FTE & WYE | 144.0 |
| NSSC Vision End-state FTE & WYE | 131.0 |
| Percent *Reduction* in Total FTE & WYE | 9.0% |

## C.6 Estimated FTE and Cost Savings (Current Level vs. NSSC vision)

Total current salaries allocated to both Civil Service and Contractors are approximately $12.5M. In the NSSC initial state, those costs are estimated at $11.4M. The cost savings from current state to NSSC initial state would be approximately $1.1M, which would give the NSSC a 9% reduction in costs.

## C.7 Interdependencies and Qualifiers required for implementation

There are several qualifiers and interdependencies for successful transition of Procurement functions to the NSSC. Successful implementation followed by smooth operation of IFM Core finance is the foundation for completion of all transactional activities, with contractor access to the IFM system required. Successful implementation of IFM Procurement Management Module is required to restore Procurement's ability to collect standard metrics data, a capability lost due to the lack of an interface between the legacy system (AMS) and SAP.. In addition to IFM, it is recognized that additional IT support must be provided by the Information Technology

subfunction. While the SIPOC activity identified the high level organizational interdependencies, standardized work processes and a detailed workflow analysis for each of the functional tasks must be performed prior to migration to the NSSC. Other prerequisites for success include electronic end-to-end grants processing, including document generation, and SBIR/STTR process reengineering. Finally, standardized Agency forms application software must be identified for successful implementation of Procurement's One NASA standardized forms initiative.

## C.8 Conclusions

The Procurement Subteam identified 43 activities grouped into 29 activities from the four main functional categories as prime candidates for transition to the NSSC. These 29 candidate functions identified for transition employ approximately 16% of the total baseline figure for the Procurement function across the Agency. Initial cost analysis indicates that the NSSC would reduce aggregate salaries and associated costs for the Procurement function from approximately $12.5M to $11.4M, which would result in a cost savings of approximately $1.1M (9%).

# Appendix D: Functional Team Reports- Financial Management

## D.1 Functional Area Overview

The financial management function is composed of a variety of key services that may be categorized under the following headings: accounting, paying, analysis, and reporting. Activities under the accounting group include general administration and policy, reimbursable accounting, cost accounting, labor processing/distribution, accounts receivable, general ledger and fund control activities. The payment category houses functions such as payroll, travel reimbursements, and accounts payable to vendors. Finally, the reporting area includes financial reporting by Contractors along with a variety of periodic Agency financial reporting.

## D.2 Sub Functions / Activities Recommended to be Consolidated

The financial management Subteam reviewed functional activities or tasks found within the financial management function. The following is a list of financial management activities that the Subteam recommends for transition to the NSSC:

1. Accounts Payable
   a. Vendors
   b. Payroll
   c. Travel
2. Certifying Officer function
3. Accounts Receivables, Collection Agent
4. Reimbursables
   a. Collections
   b. Closeouts
5. Payroll
6. Time and Attendance
7. Labor Processing/Distribution
8. Financial Reporting Services
   a. Treasury SF-224
   b. NF 1018
   c. General Ledger
9. Quality Control
   a. Internal reviews for NSSC/Finance
10. PCS/International Travel Vouchers
11. Domestic Travel Vouchers
12. Center Customer Services
13. Customer Services (located at NSSC/Finance)

## D.3 Financial Management Characteristics Matrix

The following table depicts Financial Management functional tasks categorized by services that would be consolidated, tasks requiring more study, and services that would remain at the Centers.

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Financial Management**<br><br>*29 Activities Reviewed* | ■ Accounts Payable (Payroll, Travel, Vendors)<br>■ Payment Certification<br>■ Accounts Receivable (Billing, Collection)<br>■ Payroll, Time & Attendance<br>■ Labor Processing/Distribution<br>■ Financial Reporting (General Ledger, Treasury 224, NF-1018's)<br>■ Reimbursable Accounting (Collections, Closeouts)<br>■ Internal Reviews for NSSC/F office<br><br>*(44% of FM FTEs)* | ■ Property Accounting (Real & Personal)<br>■ Posting of Contractor 533 Cost Input<br>■ Travel Ticketing and Reservations function | ■ Fund Control<br>■ Reconciliations to GL and Subsidiary Accounts<br>■ Rate Development<br>■ Business Process Leads<br>■ SAP Super-users Core Finance<br>■ Budget Execution activities<br>■ Labor System Accounting and Control<br>■ Service Pool Accounting and Operations<br>■ Validation of Receipts<br>■ Personal and Real Property<br>■ Cost Estimation (reimbursable, service pool, contracts)<br>■ Pricing Analysis<br>■ Center Internal Reviews<br>■ Asset Validation & Evaluation<br>■ Center Financial Statements<br>■ 533 Cost Analysis<br>■ Systems Accounting<br>■ General Administration and Policy & Training |

## D.4 FY02 FTE and Funding Baseline

The NSSC Financial Management (FM) Subteam gathered FTE and salary data for each FM functional task on a Center-by-Center basis. The FM Subteam estimated how many Civil Service and Contractors currently perform the tasks that are recommended for transition. During fiscal year 2002, an estimated 142 Civil Service and 98 Contractors performed those functional tasks recommended to migrate to the NSSC giving a total of 240 FTEs. The current Civil Service to Contractor mix is approximately 59% to 41%.

The FM Subteam gathered FY02 Baseline data for the entire FM function across NASA. In fiscal year 2002, the total was approximately 384 Civil Service and 163 Contractors, or 547 FTEs. Comparing the 240 FTEs recommended for transition to the NSSC to the total overall FM FTEs, approximately 44% of the FM FTE would transition to the NSSC, while the remaining 56% would be retained by the NASA Centers.

## D.5 NSSC vision-end state

The FM Subteam estimated the number of FTEs, both Civil Service and Contractors, that would be needed at the NSSC to perform the functional tasks planned for migration. The subteam estimated that the NSSC would decrease the current CS from 142 to approximately 58 CS, while increasing the number of needed Contractors from 98 to 106, to perform the NSSC FM functional tasks. Overall, the total FTEs would decrease from 240 to 164, or a total percentage decrease of 32%. The Civil Service to Contractor mix in the NSSC would be approximately

35% to 65%. The following table displays the forecasted altering of the workforce composition from current state to the NSSC vision:

**Table D-1: Financial Management FTE Analysis**

| Changes in NSSC FTE/WYE (Current--> NSSC Vision End-State) | |
|---|---|
| Current Total FTE | 142.0 |
| NSSC Vision End-state FTE | 58.0 |
| Percent *Reduction* in FTE | 59.2% |
| Current Total WYE | 98.0 |
| NSSC Vision End-state WYE | 106.0 |
| Percent *Increase* in WYE | 8.2% |
| Current Total FTE & WYE | 240.0 |
| NSSC Vision End-state FTE & WYE | 164.0 |
| Percent *Reduction* in Total FTE & WYE | 31.7% |

## D.6 Estimated FTE and Cost Savings (Current Level vs. NSSC vision)

In the current state, the FM functional activities targeted for migration to the NSSC costs approximately $18M a year. The funds needed to support the FM activities at the envisioned NSSC come to a total of approximately $13.4M. The process of migrating the identified candidate FM functions to the NSSC, NASA would save approximately $4.6M or about 25% in total annual savings within the FM community.

## D.7 Interdependencies and Qualifier Required for Implementation

FM has a number of interdependencies and qualifiers that are required prior to the implementation of the NSSC. The IFM systems (Core Financial, Travel Manager, and Time and Attendance) must be operational and user friendly. The entire Agency should utilize one Agency Location Code (ALC); travelers would be responsible for retaining their own receipts; the Travel Manager interface to SAP must be real-time; and a standard agency work breakdown structure must exist. All grant activity must interface with the Department of Health and Human Services (HHS). Mandatory utilization of the web-based NF-1018 system is needed. All centers should use the same Time and Attendance System. Also standard forms must be consistent with the "One NASA" concept. For the FM function to successfully transition, IT support must be provided by the Information Technology subfunction. Procedures that would be consolidated under the NSSC/Finance should be standard across the agency. Approximately 14,000 square feet for office space would be required along with 179 workstations. This space excludes storage area, conference rooms, common areas and break rooms. Document scanning capabilities are also needed.

## D.8 Conclusions

Overall the Financial Management community proposed a large amount of work currently performed at the individual Center level to be transitioned to the NSSC, approximately 44% of their total FTEs. Many of these functions are transactional in nature. FM would experience

some cost savings in the transition of the identified functions from the current state to the NSSC. Overall FM would experience approximately $4.6M or 25% in cost savings. Additional benefits would be gained through consolidation of currently fragmented processes. Over time, due to locating the aforementioned finance functions in a single community, expertise would continue to increase creating further efficiencies. It should be noted that the full functionality of the Core Financial application and the recommended processes and policy changes must be achieved to ensure the strong likelihood of realizing the projected reductions and savings.

# Appendix E: Functional Team Reports- Resources Management

## E.1 Functional Area Overview

The resources management (RM) community at NASA performs a range of critical functions in support of NASA projects, programs, and the institution. These functions can be defined and grouped into the following functional areas:

- Budget Formulation
  - Quantify technical requirements
  - Evaluate alternatives and iteration of solutions
  - Establish baselines
  - Define performance objectives
- Budget Justification
  - Develop program/project rationale
  - Prepare supporting documentation
  - Advocate the program/project
- Budget Execution
  - Administer resources
  - Review program/project performance
- Program/Project Analysis
  - Cost estimating and evaluation
  - Schedule analysis
  - Evaluate impacts of program/project changes
  - Forecast future costs/requirements
  - Assess overall program performance
  - Identify issues/anomalies
  - Provide alternative solutions to management
- Independent Cost Estimating

Each function can be broken into discrete activities or subfunctions that are currently performed by approximately 1000 civil service FTEs and 121 contractor FTEs. These services are performed in a highly interactive manner, requiring regular contact with program/project management, system and subsystem leads, and science and technical experts. Delivery of effective resources management services requires personnel to draw on experience, apply judgment, and create analytical solutions.

## E.2 Sub Functions / Activities Recommended to be Consolidated

The RM Subteam augmented, reviewed, and revalidated the original Study Team's list of resource management functions. After careful review of the RM functional tasks performed at the Centers across the Agency, the RM Subteam identified that no tasks should be transitioned to the NSSC initially. The RM function is inherently analytical in nature, requiring in-depth program/project knowledge, and is an integral part of the decision-making process. However,

several areas should be reevaluated after the successful implementation of the IFM Core Financial and Budget Formulation Modules, including:

- Initialization of cost accruals
- Centralized agency budget database entry and edit
- Transactional aspects of Reimbursable Agreements
- Funds distribution
- Funding of Purchase Requests (particularly incremental funding)

In addition, the Agency-level independent cost estimating/assessment organization should be further studied as a candidate for the NSSC. Agency-level independent cost estimating and assessment is a specialized service that has already been consolidated; however, it is currently being revitalized and strengthened. Discussions with current management indicated it would be disruptive and unproductive to include this organization as a part of the NSSC at the outset.

## E.3 Resources Management Characteristics Matrix

The following table depicts Resources Management functional tasks categorized by services that would be consolidated, tasks requiring more study and services that would remain at the Centers.

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Resources Management**<br><br>*28 Activities Reviewed* | | ■ Independent Agency-Level Cost Estimating and Independent Review Capability<br>■ Initialization of Cost Accruals<br>■ Centralized Agency Budget Database Entry and Edit<br>■ Transactional Aspects of Reimbursable Agreements<br>■ Funds Distribution<br>■ Funding of Purchase Requests | ■ Budget Formulation<br>■ Budget Justification<br>■ Budget Execution (most transactional activities already implemented in IFMP)<br>■ Program Analysis<br>■ Cost Estimating |

## E.4 Conclusions

Due to the nature of functional tasks within the Resources Management function at NASA, no functional tasks were identified as candidates for initial transition to the NSSC. The RM function is inherently analytical in nature, requiring in-depth program/project knowledge, and is an integral part of the decision-making process. Overall, the "hands-on" nature of the RM function makes it difficult to identify activities that would benefit NASA as a whole through transition to a shared services environment. This conclusion was supported by the site visits to other organizations that have already implemented shared services. None of those organizations had consolidated resources management into their shared services centers. However, looking forward, with increased technological advances, changes in agency reporting requirements, and implementation of IFMP, additional functional candidates for consolidation could emerge.

# Appendix F: Functional Team Reports- Information Technology

## F.1 Functional Area Overview

NASA began Information Technology (IT) consolidations in the mid 1980's to achieve budget reductions and live within declining staff levels. IT consolidations and outsourcing continued in the 1990's to accommodate increasing customer demands while targeted budgets and lower staff levels became a reality. An increased demand for inherently governmental IT security and customers demand for anytime, anywhere access to IT services continues to drive IT providers to consolidate services to meet these demands.

Changes in NASA's IT architecture continue today as part of the NASA Integrated Information Infrastructure Program. The NASA Integrated Information Infrastructure Program is a large, complex initiative that would change the manner in which IT services are provided throughout the Agency.

## F.2 Sub Functions / Activities Recommended to be Consolidated

The approach to thinking about IT infrastructure would fundamentally change, and many Center or lower level systems would be replaced with standard integrated Agency systems. The overarching goal of the NASA Integrated Information Infrastructure Program is to help achieve NASA's vision by providing the information systems and technologies that enable anywhere, anytime access to information and people.

The NSSC IT Subteam augmented, reviewed, and revalidated the original Study Team's list of IT functions that were potential candidates for transition to the NSSC. The original Study Team recommended 2 major IT functions for transfer to the NSSC, and suggested more study was needed for 5 other functions. The NSSC IT Subteam added the major functions of ODIN Program Management and NASA's Computing and Communications Services to the original list. The following is a list of the functions that the IT Subteam recommended for transition to the NSSC:

**IFM Competency Center Services**

1. Program Wide Support
2. Applications Function Support
3. Follow on Projects
4. Application Development Support
5. Application Operations Support

**ODIN Program Management Services**

1. Desktop seats
2. LAN seats
3. Phone seats
4. Catalog Items
5. Upgrades

**NASA's Computing and Communications Services**

1. Data Center Services
2. WAN (NISN)
3. Application Services

## F.3 IT Functional Characteristics Matrix

The following table depicts Informational Technology functional tasks categorized by services that would be consolidated, tasks requiring more study, and services that would remain at the Centers.

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Information Technology**<br><br>*37 Activities Reviewed (plus sub-functions)* | ■ IFM Competency Center Services<br>■ NASA'S Computing and Communications Services<br>■ ODIN Program Management Services | ■ Calendaring<br>■ Pagers<br>■ Cell Phones<br>■ Print/Fax/Copier Services<br>■ Public Web Hosting<br>■ Web Shop<br>■ Document Management<br>■ Non NISN ISP<br>■ Competency Management Systems<br>■ Asset Management Systems | ■ Program-/Mission-Unique IT Operations |

## F.4 FY02 FTE and Funding Baseline

The IT Subteam gathered FY02 Baseline data for the entire IT function across NASA. In fiscal year 2002, the total was approximately 1,631 Civil Service and 7,788 Contractors, or 9,419 FTEs overall.[1]

Because the IT community is in the middle of transitioning to a shared service model, existing FTE that were performing the functions prior to consolidation could not be determined. Furthermore, the IT functions continue to rapidly change across the Agency making it difficult to establish a comparison to pre-consolidation FTEs.

## F.5 NSSC vision-end state

The IT Subteam estimated the number of FTE, both CS and Contractor, that would be needed to perform the functional tasks that were identified for transition to the NSSC. The subteam estimated that 115 Civil Service and approximately 553 Contractors would perform the IT functional tasks, giving a total FTE of approximately 668. The Civil Service to Contractor mix in the NSSC would be approximately 17% to 83%.

[1] This data was collected November 2002 by Code AO (CIO) and Code B (CFO). These numbers represent a 39% increase from FAIR Act data because it includes FTEs supporting IT functions as part of mission support in non-IT providing organizations.

Overall, the IT community would not experience a reduction in total Civil Service and Contractor FTEs in those functional tasks earmarked for transition to the NSSC. The goal would be to transform the Agency's ten information architectures into a single Agency architecture. Given the magnitude of this effort, no single Center has sufficient leverage to bring about such large-scale changes and improvements. As a result, the NSSC IT Services would be provided via a virtual organization with support at the NSSC site and matrixed support located at other NASA Centers.

## F.6 Estimated FTE and Cost Savings (Current Level vs. NSSC vision)

Due to the dynamic nature of the IT function and on-going as well as past consolidation efforts, it was not possible to estimate a pre-consolidation FTE figure for those functions transferring to the NSSC. Therefore, at this point, an estimated FTE and cost savings analysis is not possible.

## F.7 Interdependencies and Qualifiers Required for Implementation

The Information Technology has interdependencies and qualifiers that are required for implementation. In addition to the identification of dedicated NSSC functional areas' IT requirements, NASA must make decisions regarding the future of several existing consolidation activities. For instance, the follow-on contract for the Consolidate Space Operations Contract (CSOC) at MSFC, UNITs, would provide the contract vehicle for existing NASA Computing and Communications Services. The ODIN Program would also have a follow-on procurement that would affect NSSC IT services. There are several new consolidated IT activities under NASA's Integrated Information Infrastructure Program that need further staffing clarifications to determine the impact to NSSC. And lastly, there is great dependency on IFM development that would provide the infrastructure for the NSSC. Any schedule changes would directly affect the NSSC IT functions implementation.

## F.8 Conclusions

The IT Subteam identified 3 major functional tasks to migrate to the NSSC. These candidate functions identified for migration employ approximately 5% of the total baseline for the IT function (including mission IT) across the Agency. The NSSC would be heavily involved with the Agency's Enterprise architecture, run by the Chief Information Officer. This Enterprise Architecture would enable integrated systems, services and tools across the Agency. These tools enable other functional areas to achieve reductions and streamline processes. The IT community has much to offer the NSSC in terms of transfer of functional activities to the new shared services environment. The IT community also has much to gain through the transition to the NSSC in terms of improving IT services provided to NASA as a whole.

# Appendix G: Functional Team Reports- Facilities

## G.1 Functional Area Overview

The Facilities functional area includes Construction of Facilities (construction/renovation and repair), Locally approved construction modification, Facility Planning and Design (FP&D), Maintenance, Real Property management, and Master Planning. These functions can be further sub-divided, and each of the following functional divisions can be broken into discrete sub-functions and activities:

- Construction of Facilities
  - CoF Programming & Approval
  - Project Planning/Development
  - Locally approved construction modification
  - Facility planning and design (FP&D)
  - Construction
  - Activation
- Facilities Maintenance
  - Annual Work Plan
  - Maintenance Execution
  - Reliability Centered Maintenance
  - Maintenance Reporting
  - Backlog of Maintenance & Repair
  - Facility Condition Assessment
- Real Property Management
  - Stewardship
  - Records
  - Acquisition
  - Facility Utilization
  - Reporting
  - Disposal
- Master Planning
  - Center Vision
  - Data Collection & Analysis
  - Forecasts & Demands
  - Market Requirements
  - Preferred Concept

The Facilities function at NASA serves as consultant to and provides operational support for the Centers and NASA programs. Managers and personnel in the Facilities function ensure that the facilities and infrastructure of the Centers is designed, built, managed and maintained in a condition that can fully support NASA's challenging and unique programs and missions. Fully functional, world-class facilities are necessary to enable NASA to achieve its critical mission

objectives. Facilities personnel provide professional, consultative and analytical recommendations to the Centers and program managers.

The Implementation Team did not review other functional areas of asset management. The Implementation Team decided to focus on the Facilities function since this area of asset management contains the greatest portion of the asset value and annual program funding.

## G.2 Sub Functions / Activities Recommended to be Consolidated

The Facilities Subteam reviewed subfunctions in (1) Construction of Facilities (including locally approved construction modification and facility planning and design (FP&D)), (2) Maintenance, (3) Real Property management, and (4) Master Planning. Within these four functional areas the subteam reviewed approximately 180 subfunctions. No functions or subfunctions were determined to be candidates for consolidation. The conclusion of the subteam was that the tasks and activities involved in the subfunctions are Center focused and require Center-based knowledge, analysis, and decisions that are directly tied to an understanding of the Center's specific mission and goals, and therefore the subfunction tasks and activities are not candidates for consolidation. This determination is based on the Subteam's collective expert opinion that the functions reviewed are not severable from Center operations. By their very nature the functions are consultative and advisory to the Center Director and other senior managers in the support of the Center missions and in support of the NASA programs. Further, the analytical nature of the facilities functions requires an in-depth knowledge of the Center's operations and an understanding of the interrelations of different projects with ongoing Center operations for the most cost effective delivery of facilities management. The effect of moving functions to an NSSC would not result in improved performance, or cost savings.

Following this determination, the Implementation Team requested that the Facilities Subteam conduct further review of the feasibility of consolidating certain professional services. The subteam reviewed four subfunctions to determine if consolidation into a professional services organization would have the potential to enhance support of the programs at the Centers. The four subfunctions scrutinized by the second review were; (1) Master Planning, (2) A&E Services, (3) Facility Condition Assessments, and (4) Economic Analysis of projects including Life Cycle Cost Analysis. The results of this feasibility study are summarized below.

**Master Planning:** The two aspects of master planning that the subteam reviewed were: (1) master planning at the Center level, and (2) consolidation (roll-up) of the master plans across the Agency.

In its discussion on the first aspect (Center Master Plans), the subteam considered the possibility of developing an omnibus contract in which all the Centers could place task orders for the development of a Center Master Plan. These services would include the studies and analyses necessary for master plan development. The Center Master Plan includes the steps for "visioning" the future of a Center, development of information/data on existing conditions, concept development, and proposals for development.

In this scenario, a Center would still need to have a master planning staff to provide the overall guidance and direction to Center management and to the contractor. Additionally, based on recent bottoms-up development of master plans at GSFC and KSC, successful master plan development depends upon a contractor who is familiar with both the regional regulations and requirements and the existing local/State governmental infrastructure for developing stakeholder involvement. If such capability were gained by use of sub-contractors from the omnibus contractor, any savings developed in the omnibus contract would likely be lost in the overhead cost of the subcontract.

Expertise in the elements of master planning is not the only criterion for a master-planning contractor. The Centers have unique requirements that necessitate expertise in various local initiatives, such as spaceport business forecasting (KSC), in the regional development of educational and research facilities (GSFC), in regional planning for high-tech partnerships in IT and computer applications (ARC), and expertise in national requirements for aerospace test facilities (LaRC). Of the four facilities functional areas reviewed master planning has the greatest inherent need for and understanding of the Centers' missions, its ongoing operations, the projected projects, the Centers vision and its relationship to NASA's vision, and the analysis and decisions that must be made by Center management in the development of a Center Master Plan.

The second aspect of master planning reviewed by the subteam was the consolidation of the Center Master Plans into a rollup across the agency. By way of description, this should not be considered a NASA Master Plan; rather it would be a consolidation of the Centers' Master Plans that would allow a quick overview of the Centers' concepts and proposals. Due to its nature, the Subteam agreed that the development of the rollup would likely fill a headquarters need for such information, but such a rollup would not be in direct support of any Center level requirement. As such, the subteam felt that rollup of Center Master Plans would remain a Headquarters function and not an activity that the NSSC should be involved in.

**Architectural and Engineering (A&E) Services**: Review of the sub-function of acquiring professional A&E services for "design for facilities construction and renovation" focused on the potential for an omnibus contract against which all Centers could write task orders for development of designs. Currently the majority of this work is contracted out by the Centers. The discussion focused on the high dollar value projects since lower dollar value projects would best remain at the Center level. This is due to the short time frame of the lower dollar projects and the presumed loss of cost and time efficiencies to manage these local projects from a corporate level. It was understood that the omnibus contract could either be with a single prime contractor that would conduct work through regional sub-contractors or it could be a contract with a pre-approved list of regional sub-contractors with which the Centers could write project-specific contracts.

Currently, and almost universally applied across all the Centers, the facility project manager for a specific Center project interfaces with the customer/client who requires the facility or project. The facility project manager develops the parameters of the task as well as the overall and specific requirements necessary in the design. The facility project manager coordinates the job from beginning to end.

The facility project manager, working with the project team, develops the scope of the project. Based on the project's requirements an A&E is selected by the Center based on matching qualifications that fit the job requirements. A general A&E firm may well be able to support the design of an office building or a mechanical space, but would likely not have the expertise to develop the design of a specialized research or test facility. Likewise a contractor with specialized expertise would cost too much and find its expertise wasted on designs of a standard nature. Since the contractors that develop the designs for the projects are often utilized throughout the project to conduct site inspection for quality control and analysis, the contractor must be able to support operations on a local level.

Facilities operations at NASA Centers have changed over the last decade. Reductions in personnel have moved the facilities function out of a "shop" simply supplying what the customer asked for (What the customer "wants") and has evolved into a support group led by the facility project manager that which works in close partnership with the client to provide what the client "needs." This closer relationship has meant a stronger creative community providing better services and products at a reduced cost to the client. Also, anecdotally, the experience of the Facilities Subteam is that quality of A&E services is tied directly to the proximity of the A&E firm to the client's site.

**Facility Condition Assessment:** Facility Condition Assessments are a connecting node between Real Property/Space Utilization and Maintenance. The development of reliable and consistent methods for condition assessments can assist Centers with their planning for repair and maintenance of facilities and component systems, and for modernization and programming for facility construction and renovation. The facility condition assessment information is used in the prioritization of tasks.

NASA Center and Headquarters are addressing the need for facility condition assessments, due to a current maintenance handbook (NPG 8831) requirement. Some Centers have specific contract requirements in their maintenance contracts for dedicated personnel or a separate sub-contractor to perform the facility assessments on a continual basis, covering all facilities at the Center in 3 to 5 years. This requirement is written into the scope of their maintenance contract. Other Centers require the assessment as part of the maintenance contract but not by dedicated personnel. Again the assessments for all facilities are completed in 3 to 5 years. Some Centers use general knowledge in place of a formalized assessment program, or they may use "maintenance calls" as a guide to facility condition.

Within the deferred maintenance (DM) review conducted by headquarters, a facility condition index (FCI) was developed for 7 specific systems of all NASA facilities. The DM review of all the Centers was carried out under a headquarters contract. The DM review generated a parametric estimate of the value of deferred maintenance for the Center as well as the FCI mentioned above. The DM method and the FCI appear to achieve the same result as an NSSC effort. The development of this tool and any recurrent agency-wide review is a headquarters function that is carried out by a specialized contractor. The subteam determined this tool was not a candidate for consolidation; rather it is a headquarters function.

**Economic Analysis and Life Cycle Cost Analysis:** An economic analysis (EA) is conducted on all major facilities projects and a life-cycle cost analysis (LCCA) is required by OMB for all of NASA's discrete projects. NASA utilizes the U.S. Army Corps of Engineers economic analysis tool, ECONPACK, to conduct these required LCCA. The facility project team develops the information utilized in all economic analysis. Although the OMB required LCCA are all developed within a few weeks, these LCCA are the end product of the facility project teams' economic analysis work.

The economic analysis is not conducted only once. It is a tool for the project manager to use with the client, the A&E and other stakeholders to review the cost estimate of the project. The economic analysis is conducted often to reflect proposed changes for added requirements or for reduced scope. The cost estimate would become more accurate as the design progresses and be used by the project manager to run reduced scope estimates as necessary and conduct analysis of changes. The economic analysis is a tool that enables the project manager to better define the cost for the client and to show how changes to the scope would change the cost of the project. Center personnel (the facility project manager) use this tool for computation, analysis and decisions regarding modifications of the project.

Since the EA/LCCA is a tool used to improve the design, the estimate, the budget and ultimately the product supplied to the client, it would not make sense to remove this function from the Centers. The subteam determined EA/LCCA is not a candidate for consolidation in the NSSC.

## G.3 Facilities Characteristics Matrix

The following table depicts Facilities functional tasks categorized by services that would be consolidated, tasks requiring more study, and services that would remain at the Centers. However, all but one of the facilities functions would be listed as "More Study Needed" since with the anticipated advent of Integrated Asset Management (IAM), the some subfunctions would have the potential to become standardized and thus better able to be consolidated.

| Business Area | Services to be Consolidated | More Study Needed | Services Remaining at Centers |
|---|---|---|---|
| **Facilities**<br><br>*180 Activities Reviewed* | | Pending IAM – sub-functions from these functional areas may be able to be transferred:<br>■ Construction of Facilities (construction/renovation and repair)<br>■ Locally Approved Construction/Modification<br>■ Facility Planning and Design Maintenance<br>■ Real Property Management | ■ Advisory - Program/Center Unique Services |

## G.4 FY02 FTE and Funding Baseline

The Facilities Subteam used templates to gather Civil Service FTEs, Contractor WYEs, and salary data for each of the functional tasks on a Center-by-Center basis. The Facilities Subteam gathered FY02 Baseline data for the entire Facilities function across NASA. In fiscal year 2002, there were approximately 493 Civil Service and 1853 Contractors giving a total of 2,346 FTEs. None of the facilities FTE would transition to the NSSC, they would all be retained by the NASA Centers. The FY2002 cost for facilities operations was approximately $339 million.

## G.5 Conclusions

The facilities subteam does not believe any functions should transfer to the NSSC. This determination is due to the integral part Facilities functions play in Center operations. Facilities functions also require in-depth program and project knowledge. Overall the "hands-on" nature of the Facilities functions makes it difficult to identify activities that would benefit NASA as a whole through a transition to a shared-services environment. This conclusion was supported by the site visits to other organizations that have already implemented shared services. None of those organizations had consolidated national Facilities functions into their shared services centers. In the future, with the advent of IAM and standardized practices, other changes in technology, or an increased NSSC orientation, it may be possible to transition some functions to an NSSC.

## Appendix H: Governance/Structure and Organization Approach

The Governance structure of the NSSC must consider both internal and external requirements. Governance includes both organizational designs, and reporting structures. Internally, the focus would be upon how the NSSC would be structured, how the functional processes would be represented, and how the functions would report within the NSSC. Externally, the focus would be on how the NSSC would report within the NASA organization. This focus would include to whom the NSSC would report from a customer perspective, and how the NSSC would report to senior management. How the NSSC would be set-up would be important from a perception issue for other parts of the organization – this perception could become a determinate of overall success.

The approach that was followed included:

- Review of experiences of other organizations with Shared Service Centers
- Review of leading practice organizational examples
- Review of applicable fiscal and regulatory issues
- Drafting proposed internal and external organizational structures
- Defining reporting lines
- Articulating roles and responsibilities of key NSSC leaders

### H.1 Findings

- NSSC would be located under the office of Associate Deputy Administrator for Institutions and Asset Management. This would lend credibility to the new institution through having top-level support.
- NSSC would act as a peer to NASA Centers. This would ensure the internal perception of NSSC is positive and the new institution would be treated with respect.
- NSSC executive would be a general manager as opposed to a functional manager. This would ensure equity among functional line across the Agency.

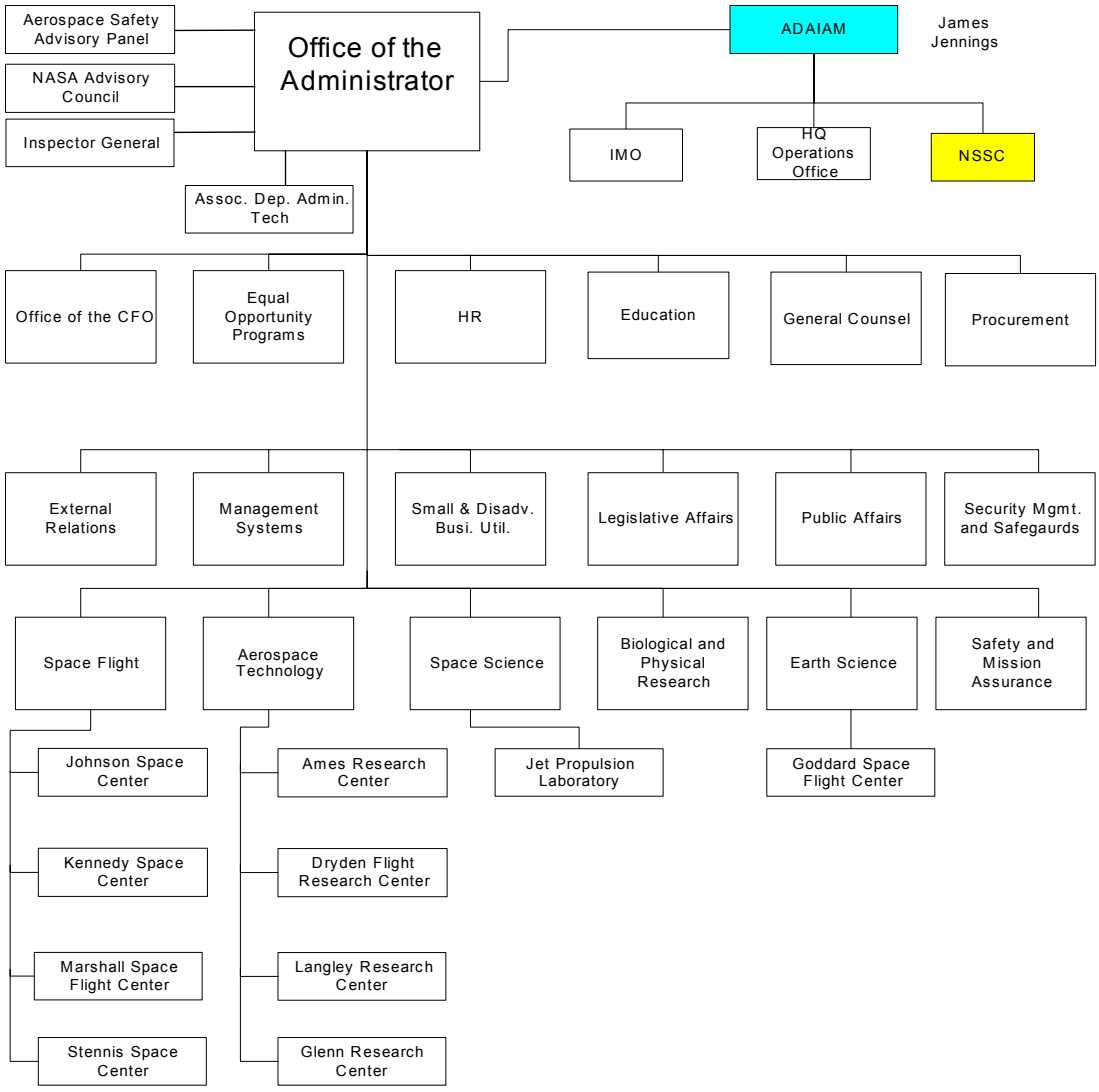
With regard to the internal structure of the NSSC, evidence from outside organizations suggested the following structural elements:

- NSSC would have a dotted line relationship with functional leads.
- NSSC would have customer support liaisons at the NASA Centers.
- A "Board of Directors" composed of various stakeholders would interact with the Leaderships of the NSSC. The purpose of such interaction is to ensure that stakeholders are fairly represented across the Agency.
- NSSC would have a single Shared Services Executive. This would promote consistency through having one point of contact.

## H.2 NSSC Structural Considerations

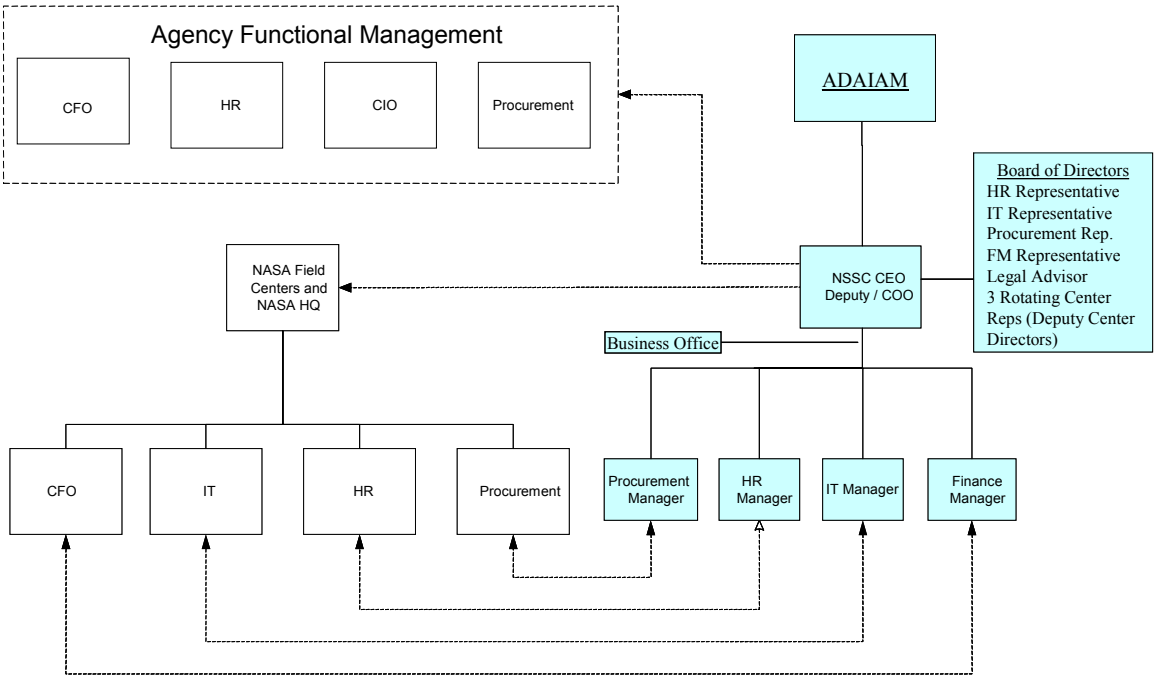
The NSSC would be a peer to other NASA Centers, located under the Associate Deputy Administrator for Institutions and Asset Management. The following indirect, external reporting lines have been identified.

**Figure H-1: Indirect External Reporting Lines for the NSSC**



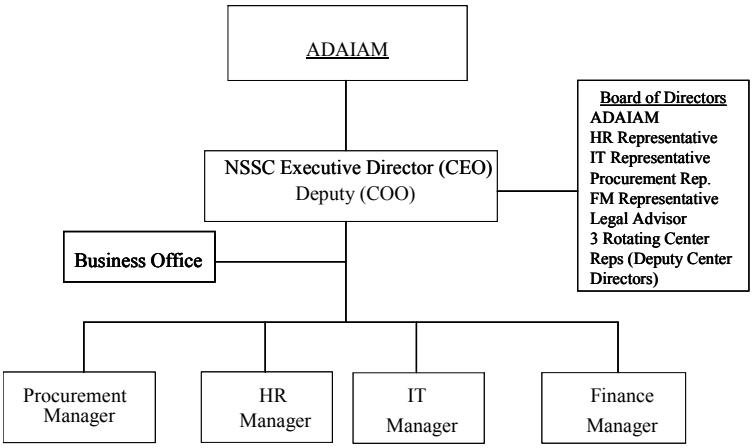

The proposed internal structure of the NSSC incorporates elements from organizations currently employing a shared services environment. The proposed NSSC internal structure is depicted below.

**Figure H-2: Proposed NSSC Internal Structure**




Under each of the functional managers an additional layer of the organization would exist.

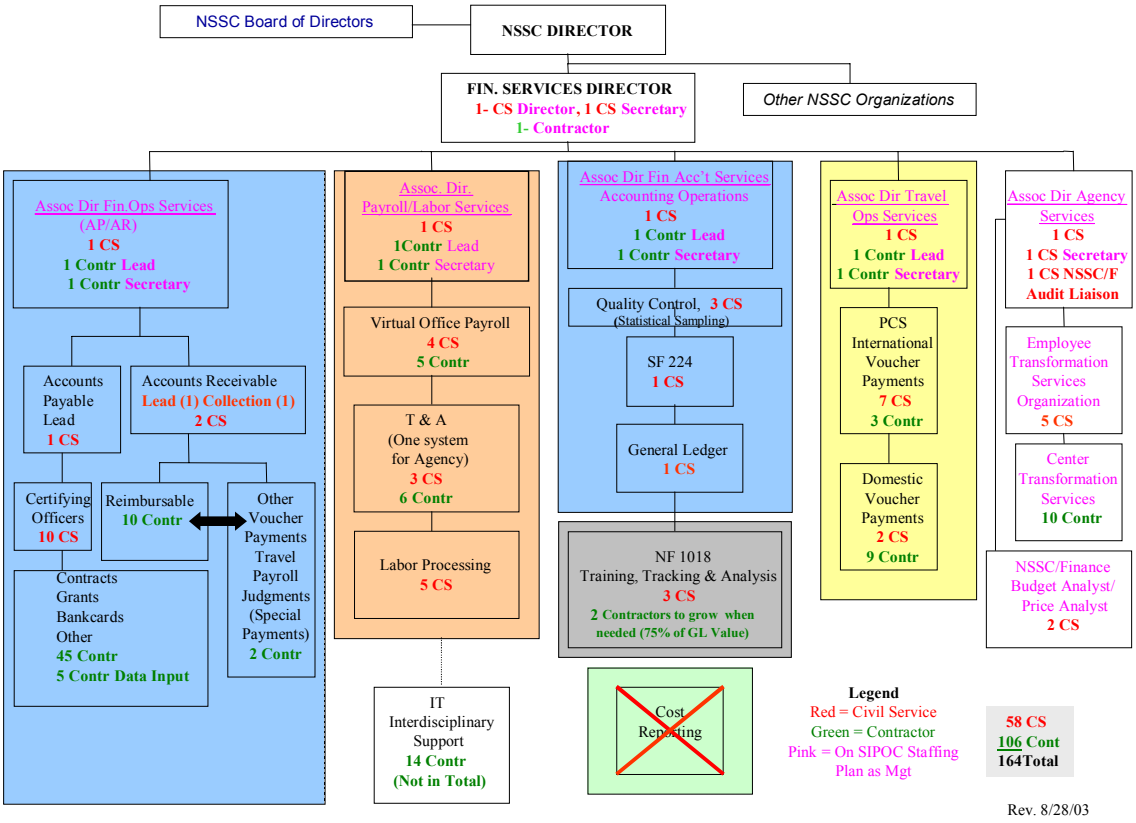
**Figure H-3: NSSC Organizational Structure**




**Functions**
**Review & Approve:**
- Strategic Direction
- Establish Policy
- Customer Advocacy and Communication
- Establish Metrics and Key Performance Indicators
- Evaluate CEO & COO

An example of how the Finance organization may look is depicted in the following diagram:

**Figure H-4: Proposed Structure of the NSSC Finance Proponent**



# Appendix I: Risk Management and Critical Success Factors

## I.1 Risk Management

The transition from a current state of affairs to NASA's NSSC will be a large undertaking. The Implementation Team identified a number of risks and mitigation strategies to ensure that NASA is prepared to properly handle issues and obstacles that would inevitably arise throughout the course of the NSSC Implementation. The following table outlines those specific risks associated with the implementation of a shared services organization.

**Table I-1: Risks and Mitigation Strategies**

| # | Risk Area | Mitigation Action |
|---|---|---|
| 1 | Unrealistic impact expectation | Develop and provide clear, crisp communications that explain the long-term, strategic nature of the project and explain that the initiative is not a near-term cost savings measure |
| 2 | Uncooperative organization | Define, explain and view NSSC as a "partner" focused on making all Centers and HQ jobs easier to perform |
| 3 | Poor/slow decision making | Establish appropriate governance processes to ensure timely, quality NSSC implementation decisions |
| 4 | Poor Scope Definition | Establish and document a clear and well-understood scope that is manageable from the outset. The NSSC should not be seen as the "answer" for everything |
| 5 | Inadequate union coordination | Involve Agency unions in a constructive dialog regarding the benefits of the NSSC to employees as well as the organization |
| 6 | Poor staff retention in NSSC | Ensure NSSC is a peer organization with Centers and has attractive benefits and well-defined career structure. |
| 7 | Decrease in timeliness, reliability, responsiveness and accuracy of information | Clearly define functional workflow processes to ensure common understanding of requirements. Develop service level agreements and metrics for all functional areas. Establish Help Desk. NSSC would be managed by a "Board of Directors" to ensure responsiveness to customers. |
| 8 | Loss of personal, face-to-face contact could result in impact to service quality for employees and decrease overall customer satisfaction – change in NASA culture | NSSC employees visit Centers on agreed upon schedule to provide face-to-face opportunities; IT infrastructure provides user-friendly personal communications capability; NSSC needs to be viewed as a partner with the Center-based staff in providing excellent service. |
| 9 | More difficult coordination, especially for agency functions | Plan "Summit Meetings" that bring functional leads together from across the Agency to facilitate communications and discussions concerning coordination between all functional areas throughout the Agency |

| # | Risk Area | Mitigation Action |
|---|---|---|
| 10 | Proximity to professional counterparts and career development opportunities | Rotation, opportunities, PDP assignments |
| 11 | Inappropriate and inexperienced staffing levels could impact ability to provide timely service; Loss of institutional knowledge | Ensure NSSC staffed at appropriate levels with competent/trained/customer-focused individuals. Utilize temporary staffing/ contract support to back-up those Center employees detailed for training and transition activities at the NSSC. Develop comprehensive staffing plan and start early to fill positions. Detail current NASA HR staff to assist in training and transition at NSSC. Through incentives, ensure capture of some of the existing talent at the Centers. Phase movement of activities. |
| 12 | Center management/ employees would not use NSSC-shadow staff at centers would evolve | NSSC liaison at Centers to facilitate use of NSSC; implement proper change management/ communications; continual support from NASA senior managers. |
| 13 | Lack of Center specific knowledge, culture, mission, and programs by NSSC employees could impact quality of service. | Provide proper training and orientation of NSSC employees; ensure that NSSC staff contains a number of current NASA employees for smooth transition. |
| 14 | Loss of flexibility; NSSC could develop standard operating procedures that do not take into account individual Center needs and requirements. | Ensure NSSC staff is customer-focused and understands the need to be flexible. |

## I.2 Critical Success Factors

Organizations that have successfully implemented shared services managed critical success factors. Critical Success Factors are dynamic and continually monitored throughout the project. The NSSC Implementation Team has identified the following critical success factors:

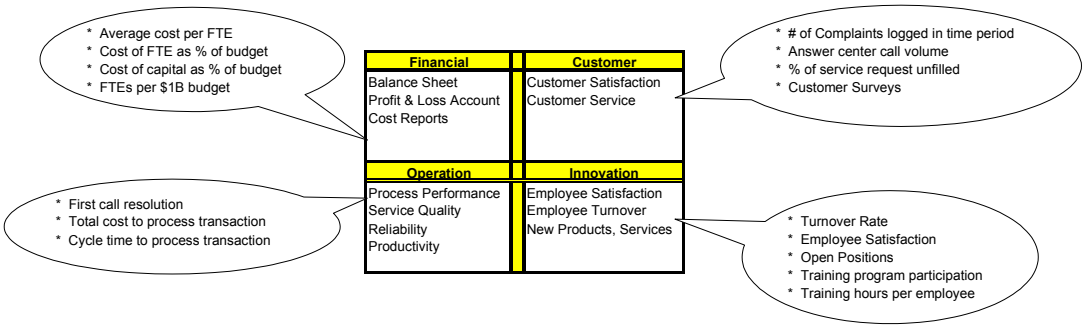
- ***Committed Leadership*** – NASA leadership is aggressively supporting and sponsoring the project. Leaders need to be updated regularly and lead by example, facilitating and assisting where necessary. For example: Freeing up peoples' time so they can fully commit to the project.
- ***Integrates with Strategy*** - All efforts need to have a direct link that develops and advances NASA and supports its strategic goals.
- ***Change Management*** - A project of this nature creates change and disruption, for the employees, customers and managers. *Change Management* helps identify resistance, and creates strategies for overcoming resistance.
- ***Measures, Incentives and Objectives*** - Enables measurement of performance progress. A reward system that is formalized within a human capital strategy would help obtain buy-in and retention of key staff. Clear objectives would articulate direction and expectation.

- ***Full Time Commitments*** from staff are required. The effort involved is so great that complete focus is necessary from the "best and brightest" staff.
- ***Project Management*** – ensures the success of complex, highly integrated projects that transcend functional boundaries. Project managers manage the project, make impartial decisions, manage business benefits and coordinate efforts.
- ***Leveraging IT Investments*** - NASA is making a huge investment in IFMP. The success of the NSSC concept and its efficiencies and savings rely upon greater levels of automation. The IFMP would establish the prerequisite Enterprise Resource Planning environment and process standardizations.

## I.3 Criteria for Measuring Success

Success should be measured to ensure that the project remains on target to meet its goals. The NSSC would rely on a balanced scorecard approach to set performance goals and measure progress over time. Four key parameters that would be tracked are: Financial, Customer, Operation and Innovation. Within each of the parameters are detailed measures:

**Figure I-1: Criteria for Measuring Success**




## I.4 Overall Conclusions

Shared services represent an opportunity for new and improved services. The future environment represents a new era for business practices. This new era is evidenced not only by the recent industry trend toward consolidated business and technical services and by the President's recent mandate for improved government performance, but also by NASA's ongoing ERP system/IT and process standardization initiatives.

The proposed NSSC is a complex, highly integrated project and its success will depend upon the management of risks and critical success factors. To gain the benefits of the NSSC would require the same focus as is used for any major project. NASA is the premier space agency in the world – the NSSC would support the PMA, promote "One NASA" initiatives, and enable employees to focus on its core functional processes.

# Appendix J: Implementation & Subteam Members

## J.1 Implementation Team Members

| *Member* | *Center* |
|---|---|
| Lew Braxton III | ARC |
| Bob Fails | GRC |
| Sandra Buffalano | GSFC |
| Al Johnson | HQ |
| Emerdene Lee | HQ |
| Ken Newton | HQ |
| Mike Reilly | HQ |
| Bill Tufte | HQ |
| James Jennings | HQ |
| Don Abrams | HQ |
| Cathy Claunch | JSC |
| Dudley Cannon | KSC |
| Vanessa Stromer | KSC |
| Dr. Elizabeth Cooper | ARC |
| Kim Dalgleish | LaRC |
| Charles Scales | MSFC |

IBM Consultants

- Kenneth Bresnahan
- Nicholas Holmes
- Kara Kehoe
- Stacey Selenfriend

## J.2 Human Resources

| *Subteam Member* | *Center* |
|---|---|
| Maureen Sarjeant | ARC |
| Connie Bosworth | DRFC |
| Gwendolyn Davis | GRC |
| Sandy Buffalano | GSFC (Lead) |
| Keith Lowe | GSFC |
| Dorothy Egbert | HQ |
| Paulette Quinn | HQ |
| Terri Robinson | HQ |
| Luke Weaver | HQ |

| | |
|---|---|
| ▪ Debbie Denton | JSC |
| ▪ Beth Nguyen | JSC |
| ▪ Natalie Saiz | JSC |
| ▪ Michael Hill | KSC |
| ▪ Lois Alliss | LaRC |
| ▪ Mack Blackman | MSFC |
| ▪ Dorsie Jones | SSC |

## J.3 Procurement

| ***Subteam Member*** | ***Center*** |
|---|---|
| ▪ Chris Signorino | ARC |
| ▪ Monique Sullivan | DFRC |
| ▪ Ron Sepesi | GRC |
| ▪ John Baniszewski | GSFC |
| ▪ Val Burr | GSFC |
| ▪ Don Abrams | HQ |
| ▪ Jeff Cullen | JSC |
| ▪ Connie Poole | JSC |
| ▪ Bob Pirkle | KSC |
| ▪ Virginia Wycoff | LaRC |
| ▪ Kim Dalgleish | LaRC (Lead) |
| ▪ Byron Butler | MSFC |
| ▪ Elaine Hamner | MSFC |
| ▪ Larry Bland | SSC |

## J.4 Financial Management

| ***Subteam Member*** | ***Center*** |
|---|---|
| ▪ Lew Braxton III | ARC (Lead) |
| ▪ Kathy Reda | ARC |
| ▪ Randy Rodrigues | ARC |
| ▪ Valerie Zellmer | DFRC |
| ▪ Christine Root | GRC |
| ▪ Paula K. Copeland | GSFC |
| ▪ Gale Fleming | GSFC |
| ▪ Shelley Meredith | HQ |
| ▪ Cliff McCarra | JSC |
| ▪ Jim Ogiba | LaRC |
| ▪ Mike Clemons | MSFC |
| ▪ Ona Elliot | MSFC |
| ▪ Cynthia Epperson | SSC |

## J.5 Information Technology

| *Subteam Member* | *Center* |
|---|---|
| Bob Brummett | ARC |
| Maria Chacon | DFRC |
| Rafael Sanabria | GRC |
| Mike Bundick | GSFC |
| Roger Bullock | HQ |
| Wanda Hobley | JSC |
| Vanessa Stromer | KSC (Lead) |
| John Kusterer | LaRC |
| Sheila Fogle | MSFC |
| Terry Luttrell | MSFC |
| Scot Gressaffa | SSC |

## J.6 Resources Management

| *Subteam Member* | *Center* |
|---|---|
| Mike Reilly | HQ |
| Cathy Claunch | JSC (Lead) |
| Glen Iwai | JSC |
| Bill Dimmer | KSC |
| Catherine Prohaska | LaRC |
| Jim Bevis | SSC |

## J.7 Facilities

| *Subteam Member* | *Center* |
|---|---|
| Corky Knowles | ARC |
| Louis Steers | DFRC |
| Richard Danks | GRC |
| Karen Flynn | GSFC |
| Ron DiLustro | HQ |
| Albert Johnson | HQ (Lead) |
| Steve Campbell | JSC |
| Susan Welch | JPL |
| Nancy Bray | KSC |
| George Firth | LaRC |
| Edwin Jones | MSFC |
| Kirk Miller | SSC |

# Appendix K: Acronyms

| | |
|---|---|
| AAC | Austin Automation Center |
| ADAIAM | Associate Deputy Administrator for Institutions and Asset Management |
| ARC | Ames Research Center |
| ATO | Agency Tender Official |
| BOA | Business Objectives and Agreements |
| BSM | Business System Manual |
| DFRC | Dryden Flight Research Center |
| CoE | Center of Excellence |
| CCI | Consolidated Contracting Initiative |
| CIA | Central Intelligence Agency |
| CIT | Change Integration Team |
| CM | Change Management |
| CO | Contracting Officer |
| CS | Civil Service |
| CSC | Computer Sciences Corporation |
| CSO | Competitive Sourcing Official |
| COTS | Commercial Off The Shelf |
| DOI | Department of the Interior |
| DM | Deferred Maintenance |
| DVA | Department of Veterans Affairs |
| EA | Economic Analysis |
| EC | Executive Council |
| EDS | Electronic Data Systems |
| EO | Executive Order |
| ERP | Enterprise Resource Planning |
| FM | Financial Management |
| FSC | Financial Services Center |
| FTE | Full Time Equivalent (Civil Service FTE) |
| GRC | Glenn Research Center |
| GSFC | Goddard Space Flight Center |
| HR | Human Resources |
| HRA | Human Resources Advisor |
| HQ | (NASA) Headquarters |
| IFMP | Integrated Financial Management Program |
| IT | Information Technology |
| JPL | Jet Propulsion Laboratory |
| JSC | Johnson Space Center |
| KSC | Kennedy Space Center |
| LaRC | Langley Research Center |
| LCCA | Life Cycle Cost Analysis |
| MEO | Most Efficient Organization |
| MSFC | Marshall Space Flight Center |

| | |
|---|---|
| NASA | National Aeronautic and Space Association |
| NCCS | NASA Computing and Communications Services |
| NOAA | National Oceanographic and Atmospheric Administration |
| NSSC | NASA Shared Services Center |
| NEPA | National Environmental Policy Act |
| OED | Office of the Executive Director |
| OMB | Office of Management and Budget |
| PBCUA | Public Buildings Cooperative Use Act |
| PWS | Performance Work Statement |
| SEB | Source Evaluation Board |
| ToF | Transfer of Functions |
| PMA | President's Management Agenda |
| PMO | Program Management Office |
| RDA | Rural Development Act |
| RM | Resources Management |
| SAP | Systems Application Programming |
| SIPOC | Suppliers-Inputs-Process-Outputs-Customers |
| SRBA | Sponsored Research Business Activity |
| SS | Shared Services |
| SSA | Source Selection Authority |
| SSC | Stennis Space Center |
| WASC | Western Administrative Support Center |
| WCF | Working Capital Fund |
| WYE | Work Year Equivalent (Contractor FTE) |